

MICHIGAN DEPARTMENT OF TRANSPORTATION

CONSULTANT PREQUALIFICATION APPLICATION INSTRUCTIONS

Consultants interested in service contracting with the Michigan Department of Transportation (MDOT) in the classifications listed in this package must be prequalified as a prerequisite to submitting proposals for contracting. Prequalification is no guarantee of being selected for a contract. Please read the enclosed instructions, complete forms, compile classification specific documentation, and return it to:

Michigan Department of Transportation
Contract Services Division
Service Prequalification
425 West Ottawa Street
P. O. Box 30050
Lansing, Michigan 48909

or overnight to:

425 West Ottawa Street
Lansing, Michigan 48933

If you need assistance, contact Michael Meddaugh, Service Prequalification Coordinator via phone (517) 335-5905 or email MeddaughM@Michigan.gov. You may also contact Carol Rademacher, Manager (517) 373-3382.

The Michigan Department of Transportation is an Equal Opportunity Employer and encourages Disadvantaged Business Enterprise certified Consultants to apply for prequalification and contracting with the Michigan Department of Transportation.

This standard Service Prequalification Package contains the following sections:

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ACCOMMODATION/ACCESS -

If you need this information in an alternate format such as large print, Braille or audio tape, or require another type of accommodation, contact MDOT Contract Services Division, Service Prequalification, at 425 W. Ottawa Street, P. O. Box 30050, Lansing, MI 48909, voice (517) 373-6402, FAX (517) 373-9466 or TDD/TTY through the Michigan Relay Center (800) 649-3777.

FILING OF APPLICATION -

Service prequalification is an on-going process. New applications will be accepted at any time. Incomplete submissions may be returned, causing a delay in prequalification processing. Renewal applications will be accepted no sooner than 30 days prior to the prequalification expiration date. The information will be reviewed to verify completeness and to determine if it meets the minimum criteria for that classification.

PERIOD OF QUALIFICATION -

Prequalification will be considered valid for a six (6) year period, providing all general/annual informational requirements are kept current. Once a prequalification expiration date has been set, all subsequent approved classifications will also expire on that date. Renewal notification letters will *not* be issued by the Service Prequalification Unit. It is the Consultant's responsibility to keep track of their expiration date. If prequalification is denied and you do not wish to appeal, you may reapply for the same classification no earlier than twelve (12) months from date of denial.

PREQUALIFICATION REQUIREMENTS -

MDOT's Request for Proposals (RFP's) will identify both primary and secondary prequalification classification requirements, as determined for each project. In order to be eligible to submit a proposal on a project, a company must have approved or provisional status in the applicable prequalification classification(s) listed in the RFP on or before the proposal due date. The requirements to perform the specific work classifications are as follows:

1. Primary Prequalification Classification.

The prime consultant/vendor **must** be prequalified in all primary prequalification classifications identified on the RFP. They may, however, subcontract out work identified under the primary prequalification classification(s) to another prequalified consultant/vendor.

2. Secondary Prequalification Classification

The prime consultant is not required to be prequalified in the secondary prequalification classification(s) identified on the RFP. The work, however, must be performed by a prequalified consultant/vendor, which may be either the prime consultant/vendor or a subconsultant/vendor.

In all cases, the prime consultant must perform **at least 40%** of the services, by dollar value, unless otherwise specified in the RFP.

Assemble your submission as follows:

Part A	General Information
B	Quality Control Plan
C	Equipment Listing
D	Staff Education and Experience
E	Consultant Project Experience

Note: MDOT must be immediately notified if there are any changes to the information supplied to us, as it may affect your prequalification.

Label parts B-E by individual prequalification classification with the name of your company, Part and classification in the upper right corner.

Example: ABC Company - Complex Bridges – B, C, D, E
ABC Company - Railroad Bridges – B, C, D, E

Part A General/Annual Information

The following information shall be submitted on an annual basis no later than your prequalification expiration date. Only complete submissions will be accepted. Leave no blank spaces; if information does not apply, please indicate N/A (not applicable). Forms can be found at: <http://mdotcf.state.mi.us/public/webforms/>.

If the required information is not received by the appropriate date, your firm's prequalification status will expire. Once expired, your firm will not be eligible for selection. If you have been selected, but no contract or authorization has been executed, no further contractual actions may be taken until you are given "approved" prequalification status. As part of your application for service prequalification, MDOT requires the following general/annual information:

- The Service Prequalification Application ([form 1242](#)) pgs. 1-5
- A copy of your Company's financial information (labeled parts 1-12), including labor rates, overhead computations and financial statements if overhead rate is not audited. If appropriate financial information is not provided, your company will be given a \$50,000 total contracting limit. The only exceptions to the above is 1) That no financial information is required if total contracting with MDOT at any given time is anticipated to be less than \$50,000, as identified on your application form; 2) Part #7, below is not required if submitting your application for approval to use the Safe Harbor Overhead Cost Rate

Note: Parts 1-12 must be clearly labeled.

To accurately evaluate your accounting system, the following information must be supplied:

- 1 - A description of how direct and indirect labor and other costs are recorded;
- 2 - A description of how project costs are segregated and accumulated;
- 3 - A sample of a completed time report;
- 4 - A sample of a project cost report for a current project;
- 5 - A current chart of accounts;
- 6 - Name of the person to contact for accounting related questions.

To accurately evaluate the rates proposed, the following information must be supplied:

- **7 - A copy of a certified Auditor's Report on your overhead rate developed in accordance with the Federal Acquisition Regulation (Title 48 Code of Federal Regulation, Part 31) including any applicable Cost Accounting Standards (Title 48 CFR, Chapter 99). This would include an audit performed by any federal, state or local audit agency and any Acceptance letters from other DOT's. (Note: If you don't have an Auditor's Report on overhead or Acceptance letter, you **MUST** submit an overhead rate computation that ties to the accompanying financial statements.) The overhead rate must be based on the time period consistent with your most recently completed fiscal year;
- 8 - A listing of all audits performed in the last three (3) fiscal years by any federal, state, or local agency. Include the name, address, and phone number of the party performing the audit and the nature of the audit. Identify any audit that is in dispute, or has not been issued;
- 9 - A certified, signed statement by owner or corporate officer attesting that all information is true and accurate, that you are aware of the federal cost eligibility and documentation requirements, and that any working papers related to your independent auditor will be made available to MDOT to review, inspect, and/or copy if MDOT deems it necessary;
- 10 - A copy of your written bonus or incentive program;
- 11 - If sole proprietorship, a copy of your most recent tax return;
- 12 - Support for labor rates of individuals assigned to similar projects. This can be a copy of the most recent payroll register with classifications noted or a listing of the employees by name, job title and pay rate as certified by a company officer.

***Not required if submitting your application for approval to use the Safe Harbor Overhead Cost Rate*

- Proof of 2/3rds Michigan Licensed Principles (see page 7); required only for those consultants seeking prequalification in engineering, architecture, and surveying related classifications.
- Organizational chart identifying all company principals.
- Proof of professional liability insurance with coverage of \$1,000,000 per occurrence (required for all consultants requesting prequalification in engineering related prequalification classifications.)
- A legible copy of your company's Articles of Incorporation (Michigan corporations), Articles of Organization

(Michigan limited liability companies), Certificate of Assumed Name (Michigan Sole Proprietorship's using an assumed name), Certificate of Authority to Transact Business or Conduct Affairs in Michigan (Non-Michigan corporation), or Certificate of Authority to Transact Business in Michigan (Non-Michigan limited liability companies).

- **State of Michigan Consultant/Payee Registration** - The State of Michigan has developed a fully integrated financial management system with one master Consultant/Payee file to be used statewide by all State departments and agencies. In order to receive payments, you must be in our master Consultant/Payee file. You may register at www.mi.gov/cpexpress. To ensure this process is completed, new consultants **must provide proof of registration and a copy of their Request for Taxpayer Identification Number and Certification Form (W-9)**. **Current vendors need only submit a W-9**. To complete the registration process, you will need to know the National Institute of Government Purchasing (NIGP) [commodity/service code\(s\)](#) for the service classification(s) for which you are applying. These codes are listed on the Department of Management, Technology and Budget website. Completion of the State of Michigan Consultant/Payee Registration process does not guarantee you will receive contracts with the State of Michigan. You need only complete one Consultant Registration for each Taxpayer Identification Number.
- The Vendor Availability Questionnaire ([Form 0168](#)).

Part B Quality Assurance/Quality Control Measurements-

The following definitions apply to the production of goods and services related to public transportation for the Michigan Department of Transportation.

Quality Control (QC) – refers to the operational activities put in place to control the quality of a product or service. These include activities such as providing clear decisions and directions, constant supervision by experienced individuals, timely review of completed activities for accuracy and completeness, and accurate documentation of all decisions, assumptions, and recommendations. Quality control procedures, if followed, should ensure that the work is done correctly.

Quality Assurance (QA) – describes the process of enforcing quality control standards, i.e. revising a checklist or a process, changing the way things are checked because of numerous errors in quality control. When quality assurance is well implemented, progressive improvement in terms of both reducing errors and omissions and increasing product usability and performance should be noted. Quality assurance should function as a voice for the customer, a reminder that a customer intends the work product for use.

Quality Control Plan (QCP) – is a comprehensive, well-defined, written set of procedures and activities aimed at delivering products that meet and/or exceed a customer's expectations, as expressed in contract documents, and/or published sources. A QCP identifies the organization or individuals responsible for quality control and the specific procedures used to ensure delivery of a quality product. A QCP should detail quality assurance measures and the method of accountability and information required.

The QCP shall include but not be limited to the following:

- Your firm's definitions of QA, QC, and QCP;
- Mission statement of Consultant responsibilities;
- Organizational chart of QA and QC managers or appointed representatives and their areas of responsibility;
- Checklist(s), sign-off sheet(s) and/or log(s) for QA/QC documents and reviewer/checker responsibilities;
- Documented format for checking plans, prints, calculations, etc;
- Error prevention and detection processes;
- Documented format for QA and QC managers or appointed representatives to verify sub-Consultants QCP's and project performance;
- Process for continuous development of better QA and QC plans and reviews, and knowledge of MDOT processes and adherence to policies and guidelines.

Part C Equipment Availability

See individual prequalification classifications for a list of equipment required for each service classification. Note that if specific software is listed, MDOT requires the consultant to identify the software version that they own so that MDOT can verify it is the current version that they are using. There are no forms supplied in this package for preparation of this part of the submission.

Part D Staff Education and Experience

- Please note that all resumes should highlight experience as it relates to the specific prequalification classification that is being applied for.
- See individual prequalification classifications for a detailed listing of staff requirements.
- Include only key staff (staff likely to work on Michigan projects in the classification for which you are seeking prequalification). Please report your employee's experience as it pertains to the classification in which you are seeking prequalification. A sample resume is available in the 1242 form titled, Staff Education and Experience Report. Please note that the Staff Education and Report is just a template and not all portions of the form are fillable. You may choose to replace the template with your own resume form, however, if you do so, make sure that all information listed in the template is included on your resume format.

Part E Consultant Project Experience

Please note that all Consultant Project Experience listed should highlight experience as it relates to the specific prequalification classification that is being applied for.

See individual prequalification classifications for a detailed listing of Consultant requirements. There are no forms supplied in this package for preparation of this part of your submission.

If your firm is not determined to have sufficient Consultant project experience for immediate prequalification, but is otherwise qualified, you may be placed on provisional status until you compete for and successfully complete a pilot project for MDOT or a prime Consultant working for MDOT.

PREQUALIFICATION APPEAL PROCESS –

The purpose of the Service Consultant Prequalification Appeal Process is to provide the service Consultant an opportunity to dispute prequalification decisions made at the time of initial prequalification, at the time of prequalification renewal, as a result of less than satisfactory performance evaluations, or at any time a prequalification decision has been made that adversely affects the service Consultant's ability to perform work for MDOT. A Consultant may file a written request for a prequalification appeal to MDOT, within 14 calendar days from the date on the prequalification notification letter documenting the prequalification decision to deny, decrease, suspend, revoke, or make provisional. All appeal requests must be mailed to:

Michigan Department of Transportation
Contract Services Division
Service Prequalification
425 West Ottawa Street
P. O. Box 30050
Lansing, Michigan 48909

Or sent by facsimile to:
Service Prequalification Unit
(517) 373-9466

If an appeal by the service Consultant is not received by MDOT within 14 calendar days from the date of the prequalification notification letter from MDOT to the service Consultant, MDOT's proposed action on the service Consultant's prequalification is final and not subject to further contest or appeal.

If the written appeal request is received in a timely manner, MDOT will contact the Consultant to schedule a Tier One Appeal meeting. The Tier One Appeal meeting may be conducted by phone conference if it is more convenient to the parties involved. The Tier One Prequalification Appeal Panel may include a manager from the Contract Services Division, one or more technical evaluators and a representative from the prequalification Unit. Neither party shall be represented by counsel at this meeting nor shall either party make audio or visual recordings of this meeting.

The Consultant shall not submit any additional information to MDOT prior to the Tier One Appeal meeting. During the Tier One Appeal meeting, the Consultant may be asked to submit additional information if it is determined that additional information can support the appeal. If the Consultant is asked to submit additional information, they shall do so within fourteen (14) calendar days of the Tier One Appeal meeting. Any information submitted by the Consultant after fourteen (14) calendar days will not be considered by MDOT.

The Consultant will be notified of the Panel's decision within thirty (30) days after receipt of all of the additional information requested, if they are asked to submit additional information. The Consultant will be notified of the Panel's decision within fourteen (14) calendar days after the Tier One Appeal meeting if your firm is not asked to submit any additional information. If a written request for an appeal of the decision from the Tier One Appeal meeting is not received by the department within fourteen (14) calendar days of the date of the Tier One Appeal decision, the decision of the Tier One Prequalification Appeal Panel will become final and binding on your firm and the prequalification status will be adjusted accordingly. If your firm is not satisfied with the determination of the Tier One Appeal Panel, your firm will have fourteen (14) calendar days from the date of the appeal decision to request a Tier Two Appeal.

The Tier Two Prequalification Appeal Panel will be comprised of three (3) MDOT Division Administrators. The Tier Two Prequalification Appeal Panel may have other department employees or representatives attend and participate in the meeting. The Tier Two Prequalification Appeal Panel may affirm or modify the decision of the Tier One Prequalification Appeal Panel, or may take other actions as it sees fit. The Consultant will be notified of the Tier Two Prequalification Appeal Panel's decision within 30 calendar days of the Tier Two Appeal Meeting.

If the vendor chooses to appeal the Tier Two decision, they must notify the department within fourteen (14) calendar days of the date of the Tier Two Appeal decision. If notification is not received within fourteen (14) calendar days of the Tier Two Appeal decision, the decision of the Tier Two Prequalification Appeal Panel will become final and binding on the service vendor and their prequalification status will be adjusted accordingly.

IMPORTANT INFORMATION

INFORMATION TO FIRMS OFFERING PROFESSIONAL SERVICES IN ARCHITECTURE, PROFESSIONAL ENGINEERING AND/OR PROFESSIONAL SURVEYING -

Excerpts from Article 20 of the Occupational Code, P.A. 299 of 1980, as Amended:

"339.2001 Definitions

Sec. 2001. As used in this article:

(b) Firm means a sole proprietorship, partnership, corporation, or limited liability company through which a person licensed under this article offers or provides a service to the public.

(d) Person in responsible charge means a person licensed under this article who determines technical questions of design and policy; advises the client; supervises and is in responsible charge of the work of subordinates; is the person whose professional skill and judgment are embodied in the plans, designs, plats, surveys, and advice involved in the services; and who supervises the review of material and completed phases of construction.

(h) Principal means a sole proprietor, partner, the president, vice-president, secretary, treasurer, or director of a corporation, or a member or manager of a limited liability company.

(k) Services mean professional service offered or provided by an architect in the practice of architecture, a professional engineer in the practice of professional engineering, or a professional surveyor in the practice of professional surveying.

339.2010 Firm; practice of architecture, professional engineering, or professional surveying; approval of non-licensed principal and principal's firm; report; person in responsible charge at each place of business; exception.

Sec. 2010. (1) A firm may engage in the practice of architecture, professional engineering, or professional surveying in this state, if not less than 2/3 of the principals of the firm are licensees.

(2) However, a non-licensed principal and the principal's firm shall apply for and receive an approval from the department to engage in the practice of architecture, professional engineering, or professional surveying, if the conduct of the firm and its principals comply with rules promulgated by the department.

(3) Upon request by the department, a firm shall report to the department the names and addresses of its principals, persons in responsible charge, unlicensed principals, and any other information the department considers necessary.

(4) A firm shall employ a person in responsible charge in the field of services offered at each place of business in this state where services are offered by the firm, except at a field office which provides only a review of construction."

WHAT THIS MEANS TO YOUR FIRM -

If your firm is contracting to provide professional services in architecture, professional engineering or professional surveying, Article 20 requires that at least 2/3 of the principals of the firm be licensed in Michigan in one or more of the professions. **A valid copy of each principal's professional license is required.**

This means that in addition to each of the licensed principals maintaining their individual licenses, each non-licensed principal must file an application for approval on form [OCS/LDB-050](#). Please note, it is mandatory that at least two out of three of the principals of the firm be licensed in the State of Michigan. Further, if all of the principals of the firm are licensed in Michigan you are not required to make any filings on behalf of your firm to the Michigan Board.

There is no fee for application for non-licensed principal approval and an acknowledgment will be issued approximately four (4) weeks after the form is submitted to the Department of Licensing and Regulatory Affairs (LARA), Design Boards. Copies of form OCS/LDB-050 and of the Occupational Code may be obtained by contacting the Board office (517-241-9253) or by accessing the LARA Web site, [Department of Licensing and Regulatory Affairs](#) to view the [Occupational Code](#) Articles 1-6.

SERVICE CLASSIFICATIONS and EVALUATION CRITERIA

Construction and Technology Support Area

Aggregate Testing-

Provide aggregate testing services for MDOT.

Certifications

- Michigan Certified Aggregate Technician
- AASHTO Accredited Laboratory or designate the accredited testing laboratory

Equipment

- Routine safety equipment
- Designate an accredited testing laboratory

Provide a document certifying that you currently own and that your staff is trained to use all necessary equipment to perform aggregate testing as required in Sections 205 & 301-307 of the current Standard Specifications For Construction, all applicable FUSP's, and MDOT Materials Quality Assurance Procedures Manual.

Provide a statement certifying your ownership of current versions of the following items and that you have staff that is knowledgeable in the use of these items:

- MDOT Standard Specifications for Construction
- MDOT Construction Manual
- MDOT Road and Bridge Standard Plans
- MDOT Materials Quality Assurance Procedures Manual
- Applicable Michigan Test Methods
- Procedures for Aggregate Inspection
- MDOT Sampling Guide

Staff Education and Experience

Provide résumés showing the following:

- Education, licenses, and certifications. A physical copy of the required certification must be supplied.
- At least one technician must have a minimum of three (3) years experience in aggregate testing services.
- List only projects completed within the past five (5) years.
 - If the projects were completed for MDOT then a minimum of three (3) projects must be listed.
 - If the projects were completed for other Michigan governmental or business entities a minimum of five (5) projects must be listed.
 - If you are using a combination of MDOT projects and other Michigan governmental/business entities, and/or other states Department of Transportation projects, then a minimum of five (5) projects must be listed.
 - List all pertinent information about the projects listed. The name of the client, project description, location, construction cost, and the employee's role on the project. Also provide the name and phone number of the client's representative. This person may be contacted to provide a reference.
 - Knowledge of AASHTO and MDOT standards and procedures.

Consultant Experience

- Provide a list of road projects the Consultant has provided aggregate testing services. For each project to be submitted for evaluation, provide the name and phone number of the owner's representative. This person may be contacted to provide a reference.
- List only projects completed within the past five (5) years.
 - If the projects were completed for MDOT then a minimum of three (3) projects must be listed.
 - If the projects were completed for other Michigan governmental or business entities, a minimum of five (5) projects must be listed.
 - If you are using a combination of MDOT projects, other Michigan governmental/business entities, and/or other states Department of Transportation projects, then a minimum of five (5) projects must be listed.
- Provide a list of current employees involved with the projects to be submitted for evaluation.

Bituminous Pavement Inspection-

Provide bituminous pavement inspection services including but not limited to yield calculations, temperature checks, width and alignment checks, joint layouts, visual inspection of the pavement mat, slope and grade checks, traffic control operations related to paving, sampling and core location determination, witnessing of ride quality and contractor workmanship

Certifications

- MDOT Bituminous Paving OR Michigan Bituminous Paving Operations

Equipment

- Routine safety equipment

Provide a document certifying that you currently own and that your staff is trained to use all necessary equipment to perform hot mix asphalt inspection as required in Sections 5.01-5.04 of the current Standard Specifications For Construction, all applicable FUSP's for hot mix asphalt, Hot Mix Asphalt QC/QA Procedures Manual of Field Testing and Materials Quality Assurance Procedures Manual.

Provide a document certifying that your firm has obtained and staff is trained to use the Fieldbook module of the FieldManager Suite of software. Consultants are responsible for upgrading and maintaining the current version of Fieldbook module of the FieldManager Suite of software used by MDOT.

Provide a statement certifying your ownership of current versions of the following items and that you have staff that is knowledgeable in the use of these items:

- MDOT Standard Specifications for Construction
- MDOT Construction Manual
- MDOT Road and Bridge Standard Plans
- MDOT HMA Production Manual
- MDOT Materials Quality Assurance Procedures Manual
- Applicable Michigan Test Methods
- MDOT Hot Mix Asphalt QC/QA Procedures Manual

Staff Education and Experience

Provide résumés showing the following:

- Education, licenses, and certifications. A physical copy of the required certification must be supplied.
- At least one technician must have a minimum of three (3) years experience in bituminous pavement inspection services.
- List only projects completed within the past five (5) years.
 - If the projects were completed for MDOT then a minimum of three (3) projects must be listed.
 - If the projects were completed for other Michigan governmental or business entities a minimum of five (5) projects must be listed.
 - If you are using a combination of MDOT projects and other Michigan governmental/business entities, and/or other states Department of Transportation projects, then a minimum of five (5) projects must be listed.
 - List all pertinent information about the projects listed. The name of the client, project description, location, construction cost, and the employee's role on the project. Also provide the name and phone number of the client's representative. This person may be contacted to provide a reference.
 - Knowledge of AASHTO and MDOT standards and procedures.

Consultant Experience

- Provide a list of road projects the Consultant has provided bituminous pavement inspection services. For each project to be submitted for evaluation, provide the name and phone number of the owner's representative. This person may be contacted to provide a reference.
- List only projects completed within the past five (5) years.
 - If the projects were completed for MDOT then a minimum of three (3) projects must be listed.
 - If the projects were completed for other Michigan governmental or business entities a minimum of five (5) projects must be listed.
 - If you are using a combination of MDOT projects and other Michigan governmental/business entities, and/or other states Department of Transportation projects, then a minimum of five (5) projects must be listed.
- Provide a list of current employees involved with the projects to be submitted for evaluation.

****Hot Mix Asphalt (HMA) Plant Inspection & Testing-**

Provide HMA plant inspection, sampling and testing services for MDOT.

Professional Registrations/Certifications

- Michigan Bituminous QC/QA Technician Certification

The following four requirements must be submitted by *facility* **ANNUALLY with the General Information**

- Annual participation in the Construction & Technology laboratory round robin program; as defined in the HMA Production Manual; Section 4: HMA Lab and Technician Qualification Program
- Annual submittal of a Quality Manual documenting the minimum requirements of AASHTO R-18; as required in the HMA Production Manual; Section 4: HMA Lab and Technician Qualification Program.
- Proof of paid registration/participation in the AASHTO Materials Reference Laboratory (AMRL) On-site Assessment Program, as required in the HMA Production Manual; Section 4: HMA Lab and Technician Qualification Program.
- Annual proof of registration/participation in the AMRL Proficiency Sample Program; (PSP) as required in the HMA Production Manual; Section 4: HMA Lab and Technician Qualification Program.

Equipment

- Routine safety equipment
- Provide a document certifying that you currently own and that your staff is trained to use all necessary equipment to perform hot mix asphalt testing as required in Section 5.01-5.04 of the current Standard Specifications For Construction and all applicable FUSP's for hot mix asphalt by facility.

Provide a statement certifying your ownership of current versions of the following items and that you have staff that is knowledgeable in the use of these items:

- MDOT Standard Specifications for Construction
- MDOT Construction Manual
- MDOT HMA Production Manual
- MDOT Materials Quality Assurance Procedures Manual
- Applicable Michigan Test Methods

Staff Education and Experience

Provide résumés showing the following:

- Education, licenses, and certifications. A physical copy of the required certification must be supplied.
- At least one technician must have a minimum of three (3) years experience in HMA plant inspection or testing services.
- List only projects completed within the past five (5) years.
 - If the projects were completed for MDOT then a minimum of three (3) projects must be listed.
 - If the projects were completed for other Michigan governmental or business entities, a minimum of five (5) projects must be listed.
 - If you are using a combination of MDOT projects and other Michigan governmental/business entities, and/or other states Department of Transportation projects, then a minimum of five (5) projects must be listed.
 - List all pertinent information about the projects listed. The name of the client, project description, location, construction cost, and the employee's role on the project. Also provide the name and phone number of the client's representative. This person may be contacted to provide a reference.
 - Knowledge of AASHTO and MDOT standards and procedures.

Consultant Experience

- Provide a list of road projects the Consultant has provided HMA plant inspection or testing services. For each project to be submitted for evaluation, provide the name and phone number of the owner's representative. This person may be contacted to provide a reference.
- List only projects completed within the past five (5) years.
 - If the projects were completed for MDOT then a minimum of three (3) projects must be listed.
 - If the projects were completed for other Michigan governmental/business entities, and/or other states Department of Transportation projects, a minimum of five (5) projects must be listed.
 - If your firm is using a combination of MDOT projects and other Michigan governmental/business entities, and/or other states Department of Transportation projects, then a minimum of five (5) projects must be listed.

Hot Mix Asphalt (HMA) Technician Testing Assistance-

Provide HMA technician, sampling and testing services for MDOT utilizing MDOT facilities and laboratory equipment.

Professional Registrations/Certifications

- Michigan Bituminous QC/QA Technician Certification

Equipment

- Routine safety equipment
- Provide a document certifying that your staff is trained to use all necessary equipment to perform hot mix asphalt testing as required in Section 5.01-5.04 of the current Standard Specifications For Construction and all applicable FUSP's for hot mix asphalt.

Provide a statement certifying your ownership of current versions of the following items and that you have staff that is knowledgeable in the use of these items:

- MDOT Standard Specifications for Construction
- MDOT Construction Manual
- MDOT HMA Production Manual
- MDOT Materials Quality Assurance Procedures Manual
- Applicable Michigan Test Methods

Staff Education and Experience

Provide résumés showing the following:

- Education, licenses, and certifications. A physical copy of the required certification must be supplied.
- At least one technician must have a minimum of three (3) years experience in HMA testing services.
- List only projects completed within the past five (5) years.
 - If the projects were completed for MDOT then a minimum of three (3) projects must be listed.
 - If the projects were completed for other Michigan governmental or business entities, a minimum of five (5) projects must be listed.
 - If you are using a combination of MDOT projects and other Michigan governmental/business entities, and/or other states Department of Transportation projects, then a minimum of five (5) projects must be listed.
 - List all pertinent information about the projects listed. The name of the client, project description, location, construction cost, and the employee's role on the project. Also provide the name and phone number of the client's representative. This person may be contacted to provide a reference.
 - Knowledge of AASHTO and MDOT standards and procedures.

Consultant Experience

- Provide a list of road projects the Consultant has provided HMA testing services. For each project to be submitted for evaluation, provide the name and phone number of the owner's representative. This person may be contacted to provide a reference.
- List only projects completed within the past five (5) years.
 - If the projects were completed for MDOT then a minimum of three (3) projects must be listed.
 - If the projects were completed for other Michigan governmental/business entities, and/or other states Department of Transportation projects, a minimum of five (5) projects must be listed.
 - If your firm is using a combination of MDOT projects and other Michigan governmental/business entities, and/or other states Department of Transportation projects, then a minimum of five (5) projects must be listed.

Bridge Construction Engineering-

Provide construction engineering, inspection and testing services on new and rehabilitation bridge projects. This includes project administration; inspection; quality control testing and reporting; measurement, computation, and documentation of quantities; reporting and record keeping; and finalizing all project documentation; for construction work to be performed by the Construction Contractor until completion of work by the Construction Contractor and acceptance of the Project and construction engineering services by the Department. Note - Bridge Painting Inspection requires a separate prequalification.

Professional Registrations

- One Professional Engineer Licensed in Michigan
- Technical Staff Certifications
 - Michigan Concrete Field Testing – Level 1 (MCA or MCPA)

Equipment

- List all routine safety equipment used.

Provide a document certifying that your firm has obtained and staff is trained to use the FieldManager Suite of software. Consultants are responsible for upgrading and maintaining the current version of FieldManager Suite of software used by MDOT.

Provide a statement certifying your ownership of current versions of the following items and that you have staff that is knowledgeable in the use of these items:

- MDOT Standard Specifications for Construction
- MDOT Construction Manual
- MDOT Road and Bridge Standard Plans
- MDOT Bridge Design Manual
- MDOT Bridge Design Guides

Staff Education and Experience

Project Manager -

Provide résumés showing the following:

- Education, registrations, and certifications.
- Each project manager must have a minimum of five (5) years experience on road construction projects with at least two (2) years experience as a project engineer with full responsibility for project administration.
- List only projects completed within the past eight (8) years.
 - If the projects were completed on Michigan trunkline then a minimum of three (3) projects must be listed.
 - If the projects were completed for municipalities or in other states a minimum of ten (10) projects must be listed.
 - If you are using a combination of MDOT project and projects from other agencies then a minimum of ten (10) projects must be listed.
 - List all pertinent information about the projects listed. The name of the client, project description, location, construction cost, and the employee's role on the project. Also provide the name and phone number of the client's representative. This person may be contacted to provide a reference.
 - Knowledge of AASHTO and MDOT standards and procedures.

Lead Technicians-

Provide résumés showing the following:

- Education, licenses, and certifications.
- Each lead technician must have a minimum of five (5) years experience in construction engineering.
- List only projects completed within the past eight (8) years.
 - If the projects were completed on Michigan trunkline then a minimum of three (3) projects must be listed.
 - If the projects were completed for municipalities or in other states a minimum of five (5) projects must be listed.
 - If you are using a combination of MDOT project and projects from other agencies then a minimum of five (5) projects must be listed.
 - List all pertinent information about the projects listed. The name of the client, project description, location, construction cost, and the employee's role on the project. Also provide the name and phone number of the client's representative. This person may be contacted to provide a reference.
 - Knowledge of AASHTO and MDOT standards and procedures.

Bridge Construction Engineering- (continued)

Other Staff -

Provide résumés showing the following:

- Education, licenses, and certifications.
- List only projects completed within the past eight (8) years.
- List all pertinent information about the projects listed. The name of the client, project description, location, construction cost, and the employee's role on the project. Also provide the name and phone number of the client's representative. This person may be contacted to provide a reference.
- Experience in construction engineering.
- Knowledge of AASHTO and MDOT standards and procedures.

Consultant Experience

- Provide a list of bridge projects the Consultant has provided full construction engineering services. For each project to be submitted for evaluation, provide the name and phone number of the owner's representative. This person may be contacted to provide a reference.
- List only projects completed within the past eight (8) years.
 - If the projects were completed on Michigan trunkline then a minimum of three (3) projects must be listed.
 - If the projects were completed for municipalities or in other states a minimum of ten (10) projects must be listed.
 - If you are using a combination of MDOT project and projects from other agencies then a minimum of ten (10) projects must be listed.
- Provide a list of current employees involved with the projects to be submitted for evaluation.

All Consultants approved for Construction Engineering (Road and Bridge) services will also be granted approval for Engineering Assistance without application.

Bridge Load Rating Analysis-

Perform Highway Bridge Load Rating Engineering Services for MDOT.

Professional Registrations/Certifications

- Two (2) or more engineers licensed in Michigan.

Equipment

- A computer with the capability of running load rating software designated by MDOT and reading electronic plan files.
- Other bridge design and/or load rating software.

Provide a statement certifying your ownership of current versions of the following items and that you have staff that is knowledgeable in the use of these items:

- AASHTO Manual for the Condition Evaluation of Bridges
- Michigan Structure Inventory and Appraisal Guide
- Michigan Bridge Analysis Guide
- MDOT Bridge Design Manual

Staff Education and Experience

Project Manager/Lead Engineer-

Provide resumes for all applicable staff showing the following:

- Education, licenses, and certifications.
- Project Manager must have a Michigan P.E. and have a minimum of five (5) years of professional experience in design and/or load rating of bridges.
- Provide a list of all in-service bridge design and/or load rating analysis for all applicable staff members.
 - List only projects completed within the past five (5) years.
 - If the projects were completed for MDOT only then a minimum of three (3) projects must be listed.
 - If the projects were completed for other Michigan governmental entities or other states Department of Transportation a minimum of five (5) projects must be listed.
 - If you are using a combination of MDOT projects, other Michigan governmental entities, and/or other states DOT, then a minimum of five (5) projects have been listed.
 - List all pertinent information about the projects listed. The name of the client, project description, location, construction cost, and the employee's role on the project. Also provide the name and phone number of the client's representative. This person may be contacted to provide a reference.
 - Knowledge of FHWA, AASHTO, and MDOT standards, regulations, and procedures.

Staff Engineers-

Provide resumes showing the following:

- Education, licenses, and certifications.
- Staff Engineers must have a Bachelor of Science in Civil or Structural Engineering and have a minimum of two (2) years of professional experience in design and/or load rating of bridges.
- Provide a list of all in-service bridge design and/or load rating analysis for each staff member.
 - List all pertinent information about the projects listed. The name of the client, project description, location, construction cost, and the employee's role on the project. Also provide the name and phone number of the client's representative. This person may be contacted to provide a reference.
 - Knowledge of FHWA, AASHTO and MDOT standards, regulations, and procedures.

Consultant Experience

- Provide a list of bridge design and/or load rating analysis projects for which the Consultant has provided services.
 - List only projects completed within the past eight (8) years.
 - If the projects were completed for MDOT only then a minimum of three (3) projects must be listed.
 - If the projects were completed for other Michigan governmental entities or other states Department of Transportation then a minimum of ten (10) projects must be listed.
 - If you are using a combination of MDOT projects, other Michigan governmental entities, and/or other states DOT, then a minimum of ten (10) projects must be listed.
 - List all pertinent information about the projects listed. The name of the client, project description, location, construction cost, and the Consultant's role on the project. Also provide the name and phone number of the client's representative. This person may be contacted to provide a reference.
- Provide a list of current employees involved with the projects for evaluation.

Bridge Painting Inspection-

Provide inspection services for partial and full painting of bridges.

Professional Registrations

- One (1) or more engineers licensed in Michigan.
- 2 inspectors with National Association of Corrosion Engineers (NACE) Coating Inspector Program 1; or Society for Protective Coatings (SSPC) - Fundamentals of Protective Coatings for Industrial Structures(C-1); or completion certificate for FHWA NHI 130079, Bridge Coatings Inspection course or similar recognized professional bridge paint inspection training course; or 3 years of bridge painting inspection experience on MDOT structures.

Equipment

Provide a document certifying that you currently own and that your staff is trained to use the equipment listed below:

- Personal protection equipment and safety equipment required by OSHA/MIOSHA (e.g., hard hat, protective clothing, reflective vests, and respirator) and according to MDOT's Personal Protection Equipment (PPE) policy.
- Bridge Paint Inspection Kit, including SSPC VIS 1 – "Guide and Reference Photographs for Steel Surfaces Prepared by Dry Abrasive Blast Cleaning".
- Provide all paint testing equipment necessary to perform bridge paint inspection.

Provide a statement certifying your ownership of current versions of the following items and that you have staff that is knowledgeable in the use of these items:

- Section 715 of the MDOT Standard Specifications for Construction, Cleaning and Coating Existing Steel Structures.
- Section 715 of the MDOT Construction Manual.

Staff Education and Experience

- Level of education completed.
- Provide a list of projects for each staff member:
 - List only projects completed in the past five (5) years.
 - Provide all pertinent information about the projects listed. The name of the client, project description, location, construction cost, and the employee's role on the project. Also provide the name and phone number of the client's representative. This person may be contacted to provide a reference.
 - Show knowledge of MDOT standards and procedures.
- Provide a disclosure statement that identifies all potential conflicts of interest in the bridge painting industry.
- Provide documentation that each inspector is on staff or that you have a valid written agreement stating that the inspector will be available for work upon request.

Consultant Project Experience

- List projects completed within the past 5 years.
 - If the projects were completed for MDOT then a minimum of three (3) projects must be listed. Projects completed for the Michigan Department of Transportation will be given a higher consideration than projects completed for other agencies. Projects with other Michigan governmental entities where an understanding of MDOT design methodology was demonstrated will be considered. Consultants otherwise showing competency in this area without significant Michigan experience will require a pilot project as part of their prequalification.
 - If the projects were completed in other states a minimum of five (5) projects must be listed. All projects listed for other states must be for other state Departments of Transportation.
 - If you are using a combination of MDOT projects, projects with other Michigan governmental entities, and/or other state DOTs, then a minimum of five (5) projects must be listed.
- For each project to be submitted for evaluation, provide the name and phone number of the owner's representative. This person may be contacted to provide a reference.
- Provide a list of current employees involved with the projects to be submitted for evaluation.

Bridge Project Scoping-

Bridge Scoping Consultant services consists of evaluating various repair alternatives for a prescribed set of bridges and recommending the optimum rehabilitation or treatment. Work includes performing a detailed physical inspection of the bridge(s), collecting rehabilitation quantities, developing a cost estimate for the repair work, and writing a report to adequately convey the physical condition of the bridge, specific areas in need of repair, and repair options considered.

Certifications/Professional Registrations

Project Manager must be a licensed Professional Engineer in Michigan.

Equipment

Routine safety equipment such as:(hard hat, reflective vest, steel-toe boots, safety glasses), ladders, accessibility to aerial lift equipment (bucket truck or Reach All), hammer, chain drag or sounding rod, spray paint, ultrasonic thickness gauge, digital camera, MDOT Bridge Design Manual and Guides, computer equipment with Microsoft software, color printer, **waders, and/or **accessibility to boat, and **PFDs for all scoping team members on the water.

Staff Education and Experience

Project Manager–

The Consultant must assign a Registered Professional Engineer, licensed in Michigan, as project manager. This person must have five (5) years experience in the design for rehabilitation of bridges and must be familiar with MDOT bridge repair methods and techniques. The project manager must have experience in the preparation and submission of project reports and be comfortable using applicable Microsoft software such as Excel and Word.

Staff –

Additional staff assigned as necessary to complete the work in the required period. The qualifications and experience of these individuals must be suitable for the assigned tasks. The project manager or a staff member or sub-Consultant must be familiar with MDOT requirements for maintaining traffic.

Lead QA/QC –

The Consultant must assign a Registered Professional Engineer, licensed in Michigan, as lead QA/QC to review all aspects of the project documents. The person performing the quality control review must have extensive experience with MDOT standards and practices.

Consultant Experience

List bridge scoping projects completed in the eight (8) years. If the projects were completed for MDOT, then a minimum of three (3) projects must be listed, including the name of the person who served as the MDOT Project Manager. If projects were completed for other Michigan governmental entities or states Department of Transportation, a minimum of ten (10) projects must be listed. A contact person for that state DOT must be provided as a reference. If using a combination of MDOT projects, other Michigan governmental entities, and/or state DOT's, then a minimum of ten (10) projects must be listed.

The Consultant must have documentation of experience on similar jobs, have experience and/or familiarity with MDOT bridge repair methods and techniques and traffic control requirements, and have experience in the preparation and submission or project reports.

*** Required only for structures over a body of water that cannot be scoped with a Reachall or by shallow wading.*

Bridge Safety Inspection-

Provide bridge safety inspection services according to the National Bridge Inspection (NBI) Program for MDOT. This pre-qualification is for "Routine" inspections as defined by AASHTO "Manual of Condition Evaluation of Bridges" of typical interstate and trunkline bridges. Additional requirements will apply to unique or structurally complex bridges, and fracture critical or damaged bridges as the case warrants and as stipulated in the Scope of Services.

Quality Assurance Measures (effective 3.15.09)

- The National Bridge Inspection Standards require quality control procedures within the unit or with each contract. These procedures must include a process review of the inspection procedures, a review of the inspection documentation created by the new inspection (minimum of 10% of the structures), and a field review of the structures inspected (minimum of 10%). If the unit has less than 10 NBI bridges in their network, they must have the QC performed every 3rd inspection cycle.
- The field review must include, at a minimum, verification of the NBIS ratings and such things as verification of the bridge number, work recommendations, etc. The quality control tasks must be done by a NBIS Qualified Team Leader -QC Engineer.
- The vendor must present a narrative of their quality process along with check off lists, and a sample documentation that will be used to verify to the department that quality control has been performed. This documentation must include a signature line for the person doing the quality control.

Professional Registrations/Certifications

- Company/firm must have an engineer licensed as a registered professional to practice in Michigan.
- A physical copy of the required certifications must be supplied.

Equipment

- Personal safety equipment for working in MDOT Right-of-Way (hard hat, safety vest, steel toe boots, etc.).
- Laptop computer with internet connection.

Provide a statement certifying your ownership of current versions of the following items and that you have staff that is knowledgeable in the use of these items:

- AASHTO, Manual for the Condition Evaluation of Bridges
- FHWA, Recording and Coding Guide for the Structure Inventory and Appraisal of the Nations Bridges
- MDOT Bridge Design Manual
- MDOT Bridge Design Guide
- The Bridge Inspection Reference Manual (BIRM)

Staff Education and Experience

Vendor must provide resumes and certificates showing the following:

Bridge Inspection "Qualified Team Leader(s) one required-

- Bridge inspection Qualified Team Leader(s) must have a Michigan P.E.
- Bridge inspection team leaders have a minimum of three (3) years of professional experience with the safety inspection of in-service bridges and culverts and provide documentation detailing this experience. Vendor has listed all pertinent information about the projects listed including the name of the client, project description, location, construction cost, and the employee's role on the project. Vendor has also provided the name and phone number of the client's representative. This person may be contacted to provide a reference.
- Bridge inspection Qualified Team Leaders have provided completion certificates for the courses listed below:
 - NHI # 130055, "Safety Inspection of In-Service Bridges" taken within the past five (5) years.
 - NHI # 130053 "Bridge Inspection Refresher Training" if it has been more than five years since completion of the class above, or 24 hours of approved recurrent training.

Staff Assisting Bridge Inspection Team Leaders-

- Bridge inspectors assisting team leaders have a minimum of one (1) year of professional experience with the safety inspection of in-service bridges and culverts and provide documentation detailing this experience. Vendor has listed all pertinent information about the projects listed including the name of the client, project description, location, construction cost, and the employee's role on the project. Vendor has also provided the name and phone number of the client's representative. This person may be contacted to provide a reference.
- Bridge inspectors assisting team leaders, the follow course work is suggested but not required:
 - NHI # 130055, "Safety Inspection of In-Service Bridges" taken within the past five (5) years.
 - NHI # 130053 Bridge Inspection Refresher Training if it has been more than five years since completion of the class above, or 24 hours of approved recurrent training.
 - NHI # 130054 Engineering Concepts for Bridge Inspectors for all non-engineers.

Quality Control Manager- (see comment section below)

- Provide certificates for successful completion the courses listed below:
 - NHI # 130055, "Safety Inspection of In-Service Bridges" taken within the past five (5) years.
 - NHI # 130053 Bridge Inspection Refresher Training if it has been more than five years since completion of the class above, or 24 hours of approved recurrent training.

Consultant Experience

- Provide a list of in-service bridge safety inspection projects for which the Consultant has provided services within the past three (3) years. List all pertinent information about the projects listed including the name of the client, project description, location, construction cost, and the employee's role on the project. Also provide the name and phone number of the client's representative. This person may be contacted to provide a reference.

*** Several functions above can be performed by one of the individuals above. For instance, quality control functions can be performed by the registered engineer if they have the training to be qualified to do the inspection. However the quality control tasks must be performed by a person different than the inspecting Qualified Team Leader.*

Density Inspection & Testing-

Provide density inspection and acceptance testing for density on structure backfill, structure embankment, engineered embankment, and pavement support structure in accordance with MDOT procedures and specifications.

Certifications

- MDOT Density Technology Certification
- NRC Nuclear Density Gauge License
- Radiation Safety Training
- Effective March 19, 2009, all prime and sub consulting firms under contract with MDOT must submit a current Certificate of Calibration for each gauge to be used on MDOT or federal aid projects. The Certificates of Calibration will be required annually for each gauge a consulting firm intends to use on all MDOT and federal aid projects. The calibration report must be from a qualified independent testing firm, and the calibration data shall be generated using a minimum of 3 calibration blocks.

The Contract Services Division will not award any new contracts that include density inspection & testing work without verifying that current calibration data is on file with the MDOT Density Technology Unit. If gauges require recalibration during the construction season, new calibration data must be sent to the MDOT Density Technology Unit. Use of gauges without current calibration data on file at MDOT will not be permitted on MDOT or federal aid projects.

Commencing with the 2010 construction season the Certificate of Calibration must contain a valid signature and be reported in accordance with the guidelines detailed in the National Institute of Standards and Technology (NIST) Handbook. Furthermore, the report must contain documentation that the results of the measurements used to determine the density of the calibration blocks are traceable to NIST.

The calibration data should be mailed to Justin Foster, MDOT Density Technology Unit at the following address:

MDOT Density Technology Unit
Construction and Technology Division
8885 Ricks Road
Lansing Michigan 48909

Equipment

- Routine safety equipment
- Provide a document certifying that your firm has obtained and staff is trained to use the Fieldbook module of the FieldManager Suite of software. Consultants are responsible for upgrading and maintaining the current version of the Fieldbook module of the FieldManager Suite of software used by MDOT.
- Provide a document certifying that you currently own and that staff is trained to use all necessary equipment to perform density inspection and testing as required in MDOT Density Control Handbook (Sections 205 & 301-307 of the current Standard Specifications For Construction)
- List all of the equipment necessary to perform density inspection and testing as noted in the MDOT Density Control Handbook
- Troxler Model 3440 nuclear moisture density gauge
- Provide a document certifying that you currently own and that staff is trained to use all applicable FUSP's and the MDOT Materials Quality Assurance Procedures Manual.

Provide a statement certifying your ownership of current versions of the following items and that you have staff that is knowledgeable in the use of these items:

- MDOT Standard Specifications for Construction
- MDOT Construction Manual
- MDOT Road and Bridge Standard Plans
- MDOT Materials Quality Assurance Procedures Manual
- Applicable Michigan Test Methods
- Density Control Handbook
- Procedures for Aggregate Inspection

Density Inspection & Testing- (continued)

Staff Education and Experience

Provide résumés showing the following:

- Education, licenses, and certifications. A physical copy of the required certification must be supplied.
- At least one technician must have a minimum of three (3) years of current, qualifying experience in density inspection and testing services.
- List only projects completed within the past five (5) years.
 - If the projects were completed for MDOT then a minimum of three (3) projects must be listed.
 - If the projects were completed for other Michigan governmental or business entities a minimum of five (5) projects must be listed.
 - If you are using a combination of MDOT projects, other Michigan governmental/business entities, and/or other states Department of Transportation projects, then a minimum of five (5) projects must be listed
 - List all pertinent information about the projects listed. The name of the client, project description, location, construction cost, and the employee's role on the project. Also provide the name and phone number of the client's representative. This person may be contacted to provide a reference.
 - Knowledge of AASHTO and MDOT standards and procedures.

Consultant Experience

- Provide a list of road projects the Consultant has provided density inspection and testing services. For each project to be submitted for evaluation, provide the name and phone number of the owner's representative. This person may be contacted to provide a reference.
- List only projects completed within the past five (5) years.
 - If the projects were completed for MDOT then a minimum of three (3) projects must be listed.
 - If the projects were completed for other Michigan governmental or business entities a minimum of five (5) projects must be listed.
 - If you are using a combination of MDOT projects, other Michigan governmental/business entities, and/or other states Department of Transportation projects, then a minimum of five (5) projects must be listed.
- Provide a list of current employees involved with the projects to be submitted for evaluation.

Engineering Assistance-

Provide specialty engineering assistance services for MDOT.

Professional Registrations

- One Professional Engineer Licensed in Michigan.

Staff Education and Experience

Provide résumés for all applicable staff showing the following:

- Education, licenses, and certifications.
- Staff members must have a minimum of three (3) years experience in the areas being evaluated.
- List only projects completed within the past five (5) years. The project listing should show experience in engineering assistance services; such as: construction project records reviews, contractor's claim procedures, documentation, and reviews, developing or reviewing "Critical Path Networks" for progress clauses and progress schedules, Value Engineering proposal evaluations, construction paving projects, bridge construction, development of special contract language or specification writing, ride quality measurements, environmental/soil erosion methods, measures, and requirements, grading & drainage construction, traffic and safety (signs, signals, guardrail, etc.) projects, experience with warranty road projects, utility coordination work, concrete or hot mix asphalt quality assurance and quality control, contractor staking projects.
 - If the services listed were provided for MDOT only, then a minimum of three (3) projects must be listed.
 - If the services listed were provided for other Michigan governmental or business entities a minimum of five (5) projects must be listed.
 - If you are using a combination of MDOT's projects, other Michigan governmental/business entities, and/or other states Department of Transportation projects, then a minimum of five (5) projects must be listed.
 - List all pertinent information about the projects listed. The name of the client, project description, location, construction cost, and the employee's role on the project. Also provide the name and phone number of the client's representative. This person may be contacted to provide a reference.
 - Knowledge of AASHTO and MDOT standards and procedures.

Consultant Experience

- List only projects completed within the past five (5) years. The project listing should show experience in engineering assistance services. The engineering assistance services provided should include a sufficient level of experience in one or more of the following areas:
 - Construction project records reviews
 - Contractor's claim procedures, documentation, and reviews
 - Developing or reviewing "Critical Path Networks" for progress clauses and progress schedules
 - Value engineering proposal evaluations
 - Construction paving projects
 - Bridge construction
 - Development of special contract language or specification writing
 - Ride quality measurements
 - Grading & drainage construction
 - Traffic and safety (signs, signals, guardrail, etc.) projects
 - Warranty road projects
 - Utility coordination work
 - Concrete or hot mix asphalt quality assurance and quality control
 - Contractor staking projects
- For each project submitted for evaluation, provide the name and phone number of the owner's representative. This person may be contacted to provide a reference.
 - If the services listed were provided for MDOT only, then a minimum of three (3) projects must be listed.
 - If the services listed were provided for other Michigan governmental or business entities a minimum of five (5) projects must be listed.
 - If you are using a combination of MDOT's projects, other Michigan governmental/business entities, and/or other states Department of Transportation projects, then a minimum of five (5) projects must be listed.
- Provide a list of current employees involved with the projects to be submitted for evaluation.

All Consultants approved for Construction Engineering (Road and Bridge) services will also be granted approval for Engineering Assistance without application.

Geotechnical Engineering Services-

Provide geotechnical engineering services for transportation infrastructure (structure, roadway, and appurtenance). This work may include, but is not limited to: subsurface exploration, in-situ soil testing, laboratory strength and classification testing, Geotechnical analysis and recommendations, and Geotechnical instrumentation.

Professional Registrations

- Two (2) or more engineers licensed in Michigan.

Equipment

Provide a statement certifying your ownership of current versions of the following items and that staff are knowledgeable in the use of these items:

- MDOT Road Design Manual
- MDOT Traffic & Safety Geometric Design Guides
- MDOT Geotechnical Investigation and Analysis Requirements for Structures

Staff Education and Experience

Provide résumés showing the following:

- Education, licenses, and certifications.
- Each staff member must have a minimum of ten (10) years experience in geotechnical engineering.
- The projects listed should show a wide range of experience involving construction engineering and geotechnical design services for retaining walls, structure foundations, earth retention systems, cofferdam design, excavation stability, embankment stability, settlement analysis, dewatering, ground improvements, grouting, tunneling, and mechanically stabilized earth walls and slopes.
 - List only projects completed within the past eight (8) years.
 - If the projects were completed in Michigan then a minimum of three (3) projects must be listed.
 - If the projects were completed in other states then a minimum of five (5) projects must be listed.
 - If you are using a combination of Michigan projects and projects in other states then a minimum of five (5) projects must be listed.
 - List all pertinent information about the projects listed. The name of the client, project description, location, cost, and the employee's role on the project. Also provide the name and phone number of the client's representative. This person may be contacted to provide a reference.

Consultant Experience

- Provide a list of projects for which the Consultant has provided geotechnical services. For each project to be submitted for evaluation, provide the name and phone number of the owner's representative. This person may be contacted to provide a reference.
 - The projects listed should show a wide range of experience involving construction engineering and geotechnical design services for retaining walls, structure foundations, earth retention systems, cofferdam design, excavation stability, embankment stability, settlement analysis, dewatering, ground improvements, grouting, tunneling, and mechanically stabilized earth walls and slopes.
 - List only projects completed within the past eight (8) years.
 - If the projects were completed in Michigan then a minimum of three (3) projects must be listed.
 - If the projects were completed in other states then a minimum of five (5) projects must be listed.
 - If you are using a combination of Michigan projects and projects in other states then a minimum of five (5) projects must be listed.
- Provide a list of current employees involved with the projects to be submitted for evaluation.
- Sample report from a geotechnical investigation (not to include appendices) within the past two (2) years. Confidential information may be blacked out.
- Provide a list of geotechnical field services that are provided by your firm that are related to subsurface exploration.
- Provide a copy of your field soil classification system.
- List your drilling capability and types of borings that you perform regularly. Describe your soil sampling capability, field testing capability, and laboratory testing capability. Include only those procedures performed directly by your staff or under direct supervision of your staff. Do not include procedures that have not been performed in the past year.
- Knowledge of MDOT and AASHTO standards and procedures.

Portland Cement Concrete Inspection & Testing-

Provide Portland cement concrete inspection and testing services for MDOT.

Certifications

- Michigan Concrete Field Testing – Level 1 (MCA or MCPA)
- AASHTO Accredited Laboratory or designate the accredited testing laboratory

Equipment

- Routine safety equipment
- Designate the certified testing laboratories to be used
- Provide a document certifying that your firm has obtained and staff is trained to use the Fieldbook module of the FieldManager Suite of software. Consultants are responsible for upgrading and maintaining the current version of the Fieldbook module of the FieldManager Suite of software used by MDOT.
- Provide a document certifying that you currently own and that your staff is trained to use all necessary equipment to perform Portland cement concrete pavement inspection and testing as required in Sections 601-605 of the current Standard Specifications For Construction, all applicable FUSP's and MDOT Materials Quality Assurance Procedures Manual.
- Provide a statement certifying your ownership of current versions of the following items and that you have staff that is knowledgeable in the use of these items:
 - MDOT Standard Specifications for Construction
 - MDOT Construction Manual
 - MDOT Road and Bridge Standard Plans
 - MDOT Materials Quality Assurance Procedures Manual
 - Applicable Michigan Test Methods

Staff Education and Experience

Provide résumés showing the following:

- Education, licenses, and certifications. A physical copy of the required certification must be supplied.
- At least one technician must have a minimum of three (3) years experience in Portland cement concrete inspection and testing services.
- List only projects completed within the past five (5) years.
 - If the projects were completed for MDOT then a minimum of three (3) projects must be listed.
 - If the projects were completed for other Michigan governmental or business entities a minimum of five (5) projects must be listed.
 - If you are using a combination of MDOT projects, other Michigan governmental/business entities, and/or other states Department of Transportation projects, then a minimum of five (5) projects must be listed
 - List all pertinent information about the projects listed. The name of the client, project description, location, construction cost, and the employee's role on the project. Also provide the name and phone number of the client's representative. This person may be contacted to provide a reference.
 - Knowledge of AASHTO and MDOT standards and procedures.

Consultant Experience

- Provide a list of projects the Consultant has provided Portland cement concrete inspection and testing services. For each project to be submitted for evaluation, provide the name and phone number of the owner's representative. This person may be contacted to provide a reference.
- List only projects completed within the past five (5) years.
 - If the projects were completed for MDOT then a minimum of three (3) projects must be listed.
 - If the projects were completed for other Michigan governmental or business entities, a minimum of five (5) projects must be listed.
 - If you are using a combination of MDOT projects, other Michigan governmental/business entities, and/or other states Department of Transportation projects, then a minimum of five (5) projects must be listed.
- Provide a list of current employees involved with the projects to be submitted for evaluation.

Remediation-

Provide environmental clean up services at sites of soil and groundwater contamination with the goal of achieving environmental closure.

Professional Registrations

One (1) or more engineers licensed in Michigan.

Equipment

- Photo-ionization detector/Flame-ionization detector
- Combustible gas indicator
- Static water level meter
- pH meter
- Conductivity meter

Staff Education and Experience

Provide résumés showing the following:

- Education, licenses, and certifications.
- Each staff member must have a minimum of five (5) years experience in soil and groundwater environmental remediation.
- The projects listed should show a wide range of experience. Summarize projects showing involvement in oversight of construction and operation/maintenance of various treatment systems. Include types of remediation projects, innovative designs, groundwater modeling, closure, and successful completion.
- List only projects completed within the past eight (8) years.
 - If the projects were completed in Michigan then a minimum of three (3) projects must be listed.
 - If the projects were completed in other states, a minimum of five (5) projects must be listed.
 - If you are using a combination of Michigan projects and projects in other states then a minimum of five (5) projects must be listed.
 - List all pertinent information about the projects listed. The name of the client, project description, location, cost, and the employee's role on the project. Also, provide the name and phone number of the client's representative. This person may be contacted to provide a reference.

Consultant Experience

- To be eligible for underground storage tank remediation work, the firm must be a Qualified Underground Storage Tank Consultant as defined by the MDEQ.
- Provide a list of projects for which the Consultant has provided remediation services. For each project to be submitted for evaluation, provide the name and phone number of the owner's representative. This person may be contacted to provide a reference.
 - The projects listed should show a wide range of experience. Summarize projects showing involvement in oversight of construction and operation/maintenance of various treatment systems. Include types of remediation projects, innovative designs, groundwater modeling, closure, and successful completion.
 - List only projects completed within the past eight (8) years.
 - If the projects were completed in Michigan then a minimum of three (3) projects must be listed.
 - If the projects were completed in other states, a minimum of five (5) projects must be listed.
 - If you are using a combination of Michigan projects and projects in other states then a minimum of five (5) projects must be listed.
- Provide a list of current employees involved with the projects to be submitted for evaluation.
- A copy of remedial action plan (not to include appendices) written within the past five (5) years. Confidential information may be blacked out.
- Consultant has knowledge of MDOT and MDEQ standards and procedures.

Road Construction Engineering-

Provide construction engineering, inspection and testing services on new and rehabilitation road projects. This includes project administration; inspection; quality assurance testing and reporting; measurement, computation, and documentation of quantities; reporting and record keeping; and finaling all project documentation; for construction work to be performed by the Construction Contractor until completion of work by the Construction Contractor and acceptance of the Project and construction engineering services by the Department.

Professional Registrations/Certifications

- One Professional Engineer Licensed in Michigan
- AASHTO Accredited Laboratory or designate the accredited testing laboratory
- Technical Staff Certifications
 - Michigan Concrete Field Testing – Level 1 (MCA or MCPA)
 - MDOT Density Technology Certification
 - MDOT Bituminous Paving or Bituminous Paving Operations
 - Michigan Certified Aggregate Technician

Equipment

- Designate the certified testing laboratories to be used.
- Routine safety equipment.
- Provide a document certifying that your firm has obtained and staff is trained to use the FieldManager Suite of software. Consultants are responsible for upgrading and maintaining the current version of FieldManager Suite of software used by MDOT.
- Provide a document certifying that you currently own and that your staff is trained to use all necessary equipment to perform density inspection and testing as required in Sections 205 & 301-307 of the Standard Specifications For Construction, all applicable FUSP's, and MDOT Materials Quality Assurance Procedures Manual.
- Provide a document certifying that you currently own and that your staff is trained to use all necessary equipment to perform aggregate inspection and testing as required in Sections 205 & 301-307 of the Standard Specifications For Construction, all applicable FUSP's, and MDOT Materials Quality Assurance Procedures Manual
- Provide a document certifying that you currently own and that your staff is trained to use all necessary equipment to perform Portland cement concrete pavement inspection and testing as required in Sections 601-605 of the Standard Specifications For Construction, all applicable FUSP's and MDOT Materials Quality Assurance Procedures Manual.
- Provide a statement certifying your ownership of current versions of the following items and that you have staff that is knowledgeable in the use of these items:
 - MDOT Standard Specifications for Construction
 - MDOT Construction Manual
 - MDOT HMA Production Manual
 - Applicable Michigan Test Methods
 - MDOT Road and Bridge Standard Plans
 - Density Control Handbook
 - Procedures for Aggregate Inspection
 - MDOT Materials Quality Assurance Procedures Manual
 - MDOT Hot Mix Asphalt QC/QA Procedures Manual

Road Construction Engineering- (continued)

Staff Education and Experience

Project Manager-

Provide résumés showing the following:

- Education, registrations, and certifications.
- Each project manager must have a minimum of five (5) years experience on road construction projects with at least two (2) years experience as a project engineer with full responsibility for project administration.
- List only projects completed within the past eight (8) years.
 - If the projects were completed on Michigan trunkline then a minimum of three (3) projects must be listed.
 - If the projects were completed for municipalities or in other states a minimum of ten (10) projects must be listed.
 - If you are using a combination of MDOT project and projects from other agencies then a minimum of ten (10) projects must be listed.
 - List all pertinent information about the projects listed. The name of the client, project description, location, construction cost, and the employee's role on the project. Also provide the name and phone number of the client's representative. This person may be contacted to provide a reference.
 - Knowledge of AASHTO and MDOT standards and procedures

Lead Technicians-

Provide résumés showing the following:

- Education, licenses, and certifications.
- Each lead technician must have a minimum of five (5) years experience in construction engineering.
- List only projects completed within the past eight (8) years.
 - If the projects were completed on Michigan trunkline then a minimum of three (3) projects must be listed.
 - If the projects were completed for municipalities or in other states a minimum of five (5) projects must be listed.
 - If you are using a combination of MDOT project and projects from other agencies then a minimum of five (5) projects must be listed.
 - List all pertinent information about the projects listed. The name of the client, project description, location, construction cost, and the employee's role on the project. Also provide the name and phone number of the client's representative. This person may be contacted to provide a reference.
 - Knowledge of AASHTO and MDOT standards and procedures.

Other Staff-

Provide résumés showing the following:

- Education, licenses, and certifications.
- List only projects completed within the past eight (8) years.
- List all pertinent information about the projects listed. The name of the client, project description, location, construction cost, and the employee's role on the project. Also provide the name and phone number of the client's representative. This person may be contacted to provide a reference.
- Experience in construction engineering.
- Knowledge of AASHTO and MDOT standards and procedures.

Consultant Experience

- Provide a list of road projects on which the Consultant has performed full construction engineering services. For each project to be submitted for evaluation, provide the name and phone number of the owner's representative. This person may be contacted to provide a reference.
- List only projects completed within the past eight (8) years.
 - If the projects were completed on Michigan trunkline then a minimum of three (3) projects must be listed.
 - If the projects were completed for municipalities or in other states a minimum of ten (10) projects must be listed.
 - If you are using a combination of MDOT project and projects from other agencies then a minimum of ten (10) projects must be listed.
- Provide a list of current employees involved with the projects to be submitted for evaluation.

All Consultants approved for Construction Engineering (Road and Bridge) services will also be granted approval for Engineering Assistance without application.

Preliminary Site Investigation (Environmental)-

Provide soil and groundwater investigation services to determine the location and concentration of environmental contamination.

Equipment

- Photo-ionization detector/Flame-ionization detector
- Combustible gas indicator
- Static water level meter
- pH meter
- Conductivity meter

Staff Education and Experience

Provide résumés showing the following:

- Education, licenses, and certifications.
- Each staff member must have a minimum of five (5) years experience in performing site investigations.
- The projects listed should show a wide range of experience in conducting investigations to determine the extent of soil and groundwater contamination. List a summary of capabilities and use of innovative technologies and methods for conducting investigations.
- List only projects completed within the past eight (8) years.
 - If the projects were completed in Michigan then a minimum of three (3) projects must be listed.
 - If the projects were completed in other states, a minimum of five (5) projects must be listed.
 - If you are using a combination of Michigan projects and projects in other states then a minimum of five (5) projects must be listed.
 - List all pertinent information about the projects listed. The name of the client, project description, location, cost, and the employee's role on the project. Also, provide the name and phone number of the client's representative. This person may be contacted to provide a reference.

Consultant Experience

- To be eligible for underground storage tank investigations, the firm must be a Qualified Underground Storage Tank Consultant as defined by the MDEQ.
- Provide a list of projects for which the Consultant has provided site investigation services. For each project to be submitted for evaluation, provide the name and phone number of the owner's representative. This person may be contacted to provide a reference.
 - The projects listed should show a wide range of experience in conducting investigations to determine the extent of soil and groundwater contamination. List a summary of capabilities and use of innovative technologies and methods for conducting investigations.
 - List only projects completed within the past eight (8) years.
 - If the projects were completed in Michigan then a minimum of three (3) projects must be listed.
 - If the projects were completed in other states, a minimum of five (5) projects must be listed.
 - If you are using a combination of Michigan projects and projects in other states then a minimum of five (5) projects must be listed.
- Provide a list of current employees involved with the projects to be submitted for evaluation.
- Provide a sample report from a site investigation (not to include appendices) within the past two (2) years. Confidential information may be blacked out.
- Consultant has knowledge of MDOT and MDEQ standards and procedures.

Technical Assistance-

Provide specialty technical assistance services for MDOT's project documentation procedures including project close outs, local agency project oversight, and office technician services. (These services do not include full Construction Engineering (Road and Bridge) or Inspection and Testing services).

Staff Education and Experience

Provide résumés for all applicable staff showing the following:

- Education, licenses, and certifications.
- Staff members must have a minimum of three (3) years experience in the areas being evaluated.
- Consultant must list only projects completed within the past five (5) years. The project listing should show experience in technical assistance services; such as, MDOT's project documentation procedures for project close outs, local agency project oversight procedures, FieldManager experience, and MDOT's project materials documentation procedures/requirements.
 - If the services listed were provided for MDOT only, then a minimum of three (3) projects must be listed.
 - If the services listed were provided for other Michigan governmental or business entities a minimum of five (5) projects must be listed.
 - If you are using a combination of MDOT's projects, other Michigan governmental/business entities, and/or other states Department of Transportation projects, then a minimum of five (5) projects must be listed.
 - List all pertinent information about the projects listed. The name of the client, project description, location, construction cost, and the employee's role on the project. Also provide the name and phone number of the client's representative. This person may be contacted to provide a reference.
 - Experience in the areas being evaluated.
 - Knowledge of AASHTO and MDOT standards and procedures.

Note: Per the Bureau of Highways Instructional Memorandum 2006-13, Project Record Certification Program, consultants performing office technician duties for certified MDOT and local agency engineers must attend the computerized office technician training during each four-year certification period.

Consultant Experience

- Consultant must list only projects completed within the past five (5) years. The project listing should show experience in technical assistance services; such as, MDOT's project documentation procedures for project close outs, local agency project oversight procedures, FieldManager experience, and MDOT's project materials documentation procedures/requirements.
- For each project to be submitted for evaluation, provide the name and phone number of the owner's representative. This person may be contacted to provide a reference.
- List specialty technical assistance services that show experience with MDOT's project documentation procedures for project close outs, local agency project oversight, and project materials documentation requirements.
 - If the services listed were provided for MDOT only, then a minimum of three (3) projects must be listed.
 - If the services listed were provided for other Michigan governmental or business entities a minimum of five (5) projects must be listed.
 - If you are using a combination of MDOT's projects or other Michigan governmental or business entities a minimum of five (5) projects must be listed.
- Provide a list of current employees involved with the projects over the past five (5) years to be submitted for evaluation.

This classification does not require the submission of a QA/QC plan.

Traffic & Safety Inspection Services-

Provide inspection services for proper design, placement, uniformity, and operation of traffic control and safety devices for MDOT and FHWA compliance. This includes inspection of pavement markings, traffic signal support structures, signing, guardrails, impact attenuators, work zone traffic control setup and removal operations, etc.

Equipment

- Provide a document certifying that your firm has obtained and staff is trained to use the FieldManager Suite of software. Consultants are responsible for upgrading and maintaining the current version of FieldManager Suite of software used by MDOT.

Staff Education and Experience

Provide résumés showing the following:

- Education, licenses, and certifications.
- At least one technician must have a minimum of three (3) years experience in traffic inspection services.
- List only projects completed within the past five (5) years.
 - If the projects were completed for MDOT then a minimum of three (3) projects must be listed.
 - If the projects were completed for other Michigan governmental or business entities a minimum of five (5) projects must be listed.
 - If you are using a combination of MDOT projects and other Michigan governmental/business entities, and/or other states Department of Transportation then a minimum of five (5) projects must be listed
 - List all pertinent information about the projects listed. The name of the client, project description, location, construction cost, and the employee's role on the project. Also provide the name and phone number of the client's representative. This person may be contacted to provide a reference.
 - Knowledge of the AASHTO Roadside Design Guide, the Michigan Manual of Uniform Traffic Control Devices (MMUTCD), and MDOT standards and procedures regarding the design, placement, uniformity, and operation of traffic control and safety devices.

Consultant Experience

- Provide a list of traffic and safety type projects for which the Consultant has provided inspection services.
 - For each project to be submitted for evaluation, provide the name and phone number of the owner's representative. This person may be contacted to provide a reference.
 - List only projects completed within the past five (5) years.
 - If the projects were completed for MDOT then a minimum of three (3) projects must be listed.
 - If the projects were completed for other Michigan governmental or business entities a minimum of five (5) must be listed.
 - If you are using a combination of MDOT projects, other Michigan governmental/business entities, and/or other states Department of Transportation projects then a minimum of five (5) projects must be listed.
- Provide a list of current employees involved with the projects to be submitted for evaluation.

Underwater Bridge Inspection-

Provide underwater bridge inspection services using divers to assess submerged components of bridge structures for MDOT.

Quality Assurance Measures

- The National Bridge Inspection Standards require quality control procedures within the unit or with each contract. These procedures must include a process review of the inspection procedures, a review of the inspection documentation created by the new inspection (minimum of 10% of the structures), and a field review of the structures inspected (minimum of 10%). If the unit has less than 10 NBI bridges in their network, they must have the QC performed every 3rd inspection cycle.
- The field review must include, at a minimum, verification of the NBIS ratings and such things as verification of the bridge number, work recommendations, etc. The quality control tasks must be done by a NBIS Qualified Team Leader -QC Engineer.
- The vendor must present a narrative of their quality process along with check off lists, and a sample documentation that will be used to verify to the department that quality control has been performed. This documentation must include a signature line for the person doing the quality control.

Professional Registrations/Certifications

- One (1) or more engineers licensed in Michigan.
- If the diving company retains the services of an engineer from outside the diving company, they must present the contract documents between the two parties; stipulate the length of the working relationship between the two parties and the number of projects completed as a result of this relationship.
- Quality Control Manager: (one required) can also perform as the engineer above if they meet all requirements.
**See comment section below.
- Inspecting Divers and Dive Team Leaders (one required):
 - The diving inspector does not need to be a registered engineer but must meet the "Qualified Team Leader" requirements of the National Bridge Inspection Standards 23-CFR-650.
 - Provides certifications by a nationally recognized authority, such as Association of Commercial Diving Educators (ACDE) in the type of equipment that will be used for the inspections.
 - Must be in sound physical condition and have proof of a medical physical within the last twelve (12) months.

Equipment

- Diving equipment applicable to the divers certification.
- Boat or marine vessel (barge, etc.) suitable for support of the diving operation.
- 2-way, diver to surface, communication equipment.
- Underwater camera equipment with lighting.
- Riverbed cross-sectioning equipment.
- Depth sounding and recording equipment.
- Current copy of the Bridge Inspection Reference Manual (BIRM).

Staff Education and Experience

Quality Control Manager ** (see comment section below)

- Provide certificates for successful completion the courses listed below:
 - NHI # 130055, "Safety Inspection of In-Service Bridges" taken within the past five (5) years.
 - NHI # 130053 Bridge Inspection Refresher Training if it has been more than five years since completion of the class above, or 24 hours of approved recurrent training.
 - NHI #130091 Underwater Bridge Inspection

Dive Team Leaders

- Vendor has provided resumes showing the following:
- Education, licenses, and certifications.
- Dive Team Leaders must have a minimum of three (3) years of professional diving experience with bridges and like structures, including the development of condition evaluation reports and stream bed profiling.
- The Dive Team Leader must be certified by a nationally recognized authority in the type of equipment that will be used for the dive.
- Must be a certified diver capable of rendering assistance in an emergency situation to the Inspecting Diver.
- Certificates for successful completion of the courses listed below:
- NHI#130055, "Safety Inspection of In-Service Bridges" taken within the past five (5) years.

Underwater Bridge Inspection- (continued)

- NHI # 130053 “Bridge Inspection Refresher Training” if it has been more than five years since completion of the class above, or 24 hours of approved recurrent training.
- NHI # 130054 “Engineering Concepts for Bridge Inspectors” for all non-engineers.
- All Bridge Inspection Team Leaders must provide a copy of the certificate showing successful completion of an underwater bridge inspection course (NHI# 130091).
- Knowledge of AASHTO and MDOT standards and procedures.

Inspecting Diver-

- Vendor has provided resumes showing the following:
- Education, licenses, and certifications.
- Inspecting Divers must have a minimum of three (3) years of professional diving experience with bridges and like structures, including the development of condition evaluation reports and stream bed profiling.
- The Inspecting Diver must be certified by a nationally recognized authority in the type of equipment that will be used for the dive.
- All Bridge Inspecting Divers must provide a copy of the certificate showing successful completion of an underwater bridge inspection course NHI# 130091.
- Knowledge of AASHTO and MDOT standards and procedures.

Diver Tender-

- Vendor has provided resumes showing the following:
- Education, licenses, and certifications.
- Diver Tenders must have a minimum of two (2) years of experience in assisting diving operations. This must be actual performance of the work and not supervision or ancillary activities.
- The Dive Team Leader is certified by a nationally recognized authority in the type of equipment that will be used for the dive.
- Knowledge of AASHTO and MDOT standards and procedures.

Consultant Experience

- Vendor has provided a list of underwater bridge inspection projects for which they have provided services.
- Vendor has listed only projects completed within the past three (3) years.
- Vendor has listed all pertinent information about the projects given. The name of the client, project description, location, construction cost, and the employee’s role on the project. Vendor has also provided the name and phone number of the client’s representative. This person may be contacted to provide a reference.
- Vendor has provided a list of current employees involved with the projects for evaluation.
- The vendor has enough qualified staff to support diving operations in open water situations and penetration dives.
- OPEN WATER DIVES - One (1) Dive Team Leader, one (1) Inspecting Diver, and one (1) Tender.
- PENETRATION DIVES - One (1) Dive Team Leader, two (2) Inspecting Divers, and one (1) Tender.
- Vendor has provided a copy of the firms “Safe Practices Manual” as required by the Michigan Consumer and Industry Services Department. Construction Safety Standards Part 31 Diving Operations. The standard can be found at: http://www.michigan.gov/dleg/0,1607,7-154-11407_15368_23452---,00.html

***Several functions above can be performed by one of the individuals above. For instance, quality control functions can be performed by the registered engineer if they have the training to be qualified to do the inspection. However the quality control tasks must be performed by a person different than the inspecting Qualified Team Leader.*

Design Services Group

Building and Structure Design-

Consultant services to provide architectural design services for MDOT projects. Architectural projects may include rest areas, field offices, garages, maintenance buildings, sound walls, weigh stations, and other structures associated with MDOT operations. Consultant should be staffed to provide design services for a complete building, including mechanical, structural and electrical components.

Professional Registrations

- One (1) or more architects licensed in Michigan.
- Two (2) or more engineers licensed in Michigan, one with a Bachelor of Science degree in Mechanical Engineering (BSME) and one with a Bachelor of Science degree in Electrical Engineering (BSEE).

Equipment

Provide a document certifying that you currently own and that your staff is trained to use the software listed below (Note that each version of software must be identified and must be MDOT's current version):

MicroStation

Staff Education and Experience

Project Managers -

Provide résumés showing the following:

- One (1) registered architect in Michigan with four (4) years of experience in preparing architectural plans, mechanical plans, electrical plans and structural plans associated with the structure.
- Two (2) Michigan Professional Engineers for mechanical and electrical engineering.
- Two (2) CADD technicians with two (2) years of experience.
- Three (3) projects in last five (5) years that include preparation of construction documents that include architectural, electrical engineering, mechanical engineering, cost estimating, project layout or sound wall design and engineering.
 - Provide all pertinent information about the projects listed. The name of the client, project description, contract number, location, construction cost, and the employee's role on the project. Also, provide the name and phone number of the client's representative. This person may be contacted to provide a reference.

Consultant Project Experience

- Firm shall have a minimum of four (4) years experience preparing plans using MDOT specifications and plan format in the type of projects associated with MDOT projects.
- Minimum of three (3) projects in last five (5) years that include preparation of construction documents that include architectural, electrical engineering, mechanical engineering, cost estimating, project layout or sound wall design and engineering.

Complex Bridges-

Curved girders, multi-level structures, long spans - over 90m (300 feet), spliced concrete girders, steel box girders, concrete segmental box girders, etc. Consultant and Staff experience in this category reflect exposure to various structure types. Consultant and staff should have experience with new construction, as well as bridge rehabilitation.

Professional Registrations

Two (2) or more engineers licensed in Michigan.

Equipment

Provide a document certifying that you currently own and that your staff is trained to use the software listed below (Note that each version of software must be identified and must be MDOT's current version):

- MicroStation (MDOT's current version)
- Provide a statement certifying your ownership of current versions of the following items and that you have staff that is knowledgeable in the use of these items:
 - AASHTO Standard Specifications for Highway Bridges or LRFD Manual
 - MDOT Bridge Design Manual
 - MDOT Bridge Design Guides
 - MDOT Standard Plans
 - MDOT Pay Item Code Book
 - MDOT Standard Specifications for Construction
 - MDOT PPMS Manual

Staff Education and Experience

Project Managers-

A minimum of two résumés are required for this classification to insure that proper quality control will be performed on MDOT projects.

Provide résumés showing the following:

- Level of education completed.
- Emphasis in structures is a plus, as are Masters degrees and SE registration.
- A minimum of five (5) years experience in Complex Bridge Design.
- Staff has listed only projects completed in the past eight (8) years.
- Knowledge of AASHTO and MDOT standards and procedures.

Other Staff-

Provide résumés showing the following

- Level of education completed.
- Experience in Complex Bridge Design.
- Knowledge of AASHTO and MDOT standards and procedures.

Consultant Project Experience

- List projects completed within the past eight (8) years.
 - If the projects were completed in Michigan then a minimum of three (3) projects must be listed. Projects completed for the Michigan Department of Transportation will be given a higher consideration than projects completed for Michigan municipalities. Projects with Michigan municipalities where an understanding of MDOT design methodology was demonstrated will be considered.
 - If the projects were completed in other states, a minimum of ten (10) projects must be listed. All projects listed for other states must be for other state Departments of Transportation.
 - If you are using a combination of MDOT projects and projects for other agencies then a minimum of ten (10) projects must be listed.
- For each project to be submitted for evaluation, provide the name and phone number of the owner's representative. This person may be contacted to provide a reference.
- Provide a list of current employees involved with the projects to be submitted for evaluation.
- Knowledge of AASHTO and MDOT standards and procedures.

All Consultants approved for Complex Bridge Design will also be granted approval for Short & Medium Span Bridge Design with or without application.

Complex Urban Freeway Design-

Urban limited access freeways with enclosed drainage, grade separations, urban and freeway-to-freeway interchanges, service roads, retaining walls, noise walls, etc.

Professional Registrations

- Two (2) or more engineers licensed in Michigan.

Equipment

Provide a document certifying that you currently own and that your staff is trained to use the software listed below (Note that each version of software must be identified and must be MDOT's current version):

- Microsoft Office
- MicroStation
- GEOPAK
- Critical Path Software. **Microsoft Project is recommended but not required.* The software must be capable of producing the printout to be submitted with the plans in a bar chart format.

Provide a statement certifying your ownership of current versions of the following items and that you have staff that is knowledgeable in the use of these items:

- MDOT Road Design Manual
- MDOT Drainage Manual
- MDOT Traffic & Safety Geometric Design Guides
- MDOT Standard Plans
- MDOT Pay Item Code Book
- MDOT Standard Specifications for Construction
- MDOT PPMS Task Manual
- AASHTO "A Policy on Geometric Design of Highways and Streets, 2004"
- AASHTO "Roadside Design Guide, 2002"
- AASHTO "A Policy on Design Standards Interstate System, 2005"

Staff Education and Experience

Project Managers-

A minimum of three (3) résumés are required for this classification to insure that proper quality control will be performed on MDOT projects.

Provide résumés showing the following:

- Level of education completed.
- A minimum of five (5) years experience in Complex Urban Freeways.
- Provide a list of projects for each staff member:
 - List only projects completed in the past eight (8) years.
 - Provide all pertinent information about the projects listed. The name of the client, project description, location, construction cost, and the employee's role on the project. Also, provide the name and phone number of the client's representative. This person may be contacted to provide a reference.
 - Knowledge of AASHTO and MDOT standards and procedures.

Other Staff-

A minimum of four (4) engineers and/or CADD technicians.

Provide résumés showing the following

- Level of education completed.
- Experience in Complex Urban Freeways.
- Knowledge of AASHTO and MDOT standards and procedures.

Complex Urban Freeway Design- (continued)

Consultant Project Experience

The Consultant must demonstrate the ability to submit a set of MDOT road plans which include title sheet, typical, note and plan view with appropriate specifications, profiles, proposed ROW, utilities, and difficult staging. Do not submit plans.

- List projects completed within the past eight (8) years.
 - If the projects were completed for MDOT then a minimum of three (3) projects must be listed. Projects completed for the Michigan Department of Transportation will be given a higher consideration than projects completed for other agencies. Projects with Michigan municipalities where an understanding of MDOT design methodology was demonstrated will be considered.
 - If the projects were completed in other states, a minimum of five (5) projects must be listed. All projects listed for other states must be for other state Departments of Transportation.
 - If you are using a combination of MDOT projects and project for other agencies then a minimum of five (5) projects must be listed.
- For the project write-ups, please highlight the following information:
 - Complex Urban Freeways projects designed by the firm or where the firm was a sub Consultant and the firm's role.
 - The projects compliance with AASHTO and MDOT standards, specifications, and procedures.
 - Drainage studies and design, if any.
 - Cost estimates performed and use of Stand Alone Estimator's Worksheet (SAEW).
 - Stage construction plans / maintaining traffic coordination.
 - Geometric improvements, if any.
 - Right-Of-Way plans.
 - Construct critical paths based upon staging (CPM).
- For each project to be submitted for evaluation, provide the name and phone number of the owner's representative. This person may be contacted to provide a reference.
- Provide a list of current employees involved with the projects to be submitted for evaluation.

All Consultants approved for Complex Urban Freeways will also be granted approval for Roadway Rehabilitation & Rural Freeways and Roads and Streets with or without application.

**Optional*

Construction Staking-

Staking and checking horizontal and vertical survey control; generation of staking data needed for road, bridge and sewer construction; three dimensional staking/positioning of equipment to enable construction.

Professional Registrations

Minimum of one (1) Michigan Professional Surveyor. Provide a legible copy of the professional registration for all applicable staff.

Safety Policies

Survey safety policy must address at a minimum: Personal Protection Equipment and work zone procedures for maintaining traffic and worker safety language, including reference to OSHA/MIOSHA regulations, and an emergency plan for a typical project or an actual project.

Equipment and Software

Provide a document certifying that you currently own or rent and staff is trained to use the equipment and software listed below. Include equipment types/models and designate whether it is owned or rented. Also list software used.

- GPS receivers – Dual frequency and associated processing software - RTK capable
- Total Station(s) with data collectors – Conventional, Robotic and Reflectorless
- Leveling equipment capable of meeting a standard deviation of +/- 2.0 mm per KM
- Data collection software
- Coordinate Geometry software
- Stakeout software
- Computers, printers, plotters

Staff Education and Experience

Michigan Professional Surveyor license number and date issued (if applicable). Document education, school level completed, degrees and certifications obtained, and list any other qualifications and experience of all key personnel and project managers utilized in your surveying program in brief introductory bio. Describe duties specific to each individual.

- Michigan licensed Professional Surveyor responsible for the company survey program must have at least five (5) years' experience as a Project Manager.
- Professional Surveyor in responsible charge and Survey Crew Chief must list a minimum of five (5) projects completed in the last five (5) years. Briefly relate the information below to each project, keeping project-specific information to a minimum and focusing on staking activities specific to each individual:
- Experience in Right-Of-Way determination and stake out, roadway alignment determination and stake out, boundary/property determinations and stake out, road and grade staking experience including slopestaking and bluetopping, culvert staking, curb staking and ADA ramps, bridge staking, and any other type of construction staking. Experience in performing property surveys, ALTA Surveys, topographic surveys, etc. in relation to Act 299 of 1980 (Occupational Code) may be necessary on MDOT construction sites. Knowledge and experience in coordinate geometry and state plane coordinate use including grid-to-ground conversions and least squares analysis of horizontal and vertical control networks; knowledge of state survey law (PA 132 of 1970, PA 74 of 1970 as amended, PA 345 of 1990, etc.), US PLSS and Government Land Office history, notes and procedures; and traffic control.
- Machine control grading experience, although not mandatory, will be helpful.

Construction Staking- (Continued)

Consultant Experience

List a minimum of five (5) projects completed in the last five (5) years. Project details should be limited to a sentence or two. Survey and staking details should be extensive. Discuss the information below for each project, as appropriate.

- Narrative description of each project including the preparation prior to staking, and equipment and techniques used for staking.
- Survey projects involving US Public Land Survey System, stake out of subdivision plats and condominium complexes, metes and bounds described parcels and other property boundary related projects. Projects involving previous Right-of-Way surveying on MDOT trunk lines. Especially work involving slopestaking, road grading, curb and gutter and ADA ramp layout, utility stakeout, storm and sanitary sewer layout, bridge staking, etc. Work experience using the Michigan State Plane Coordinate System (NAD83) and the North American Vertical Datum (NAVD88) and other vertical datums; familiarity with Digital Terrain Models. Experience in automated survey/staking systems and associated software conversions.
- All deliverables and how they were produced, field to finish.
- Conventional Survey Crew must have a minimum of two (2) individuals.
- Sample files may be requested by the technical reviewer.

Freeway Lighting-

Consultant services for freeway lighting design. Lighting on the freeway (limited access only) may be (conventional, median, tower/high mast, tunnel or under bridge). Design of lighting for local roads and state trunk lines does not require this pre-qualification.

Professional Registrations

- Two (2) more engineers licensed in Michigan with a Bachelor of Science degree in Electrical Engineering (BSEE).

Equipment

(Note that each version of software must be identified and must be MDOT's current version)

- Lighting software
- Electrical software

Staff Education and Experience

- Provide résumés with a list of Freeway Lighting projects for each staff member:
 - List only projects completed in the past five (5) years.
 - Provide all pertinent information about the projects listed. The name of the client, job #, project description, location, construction cost, and the employee's role on the project. Also, provide the name and phone number of the client's representative. This person may be contacted to provide a reference.

Consultant Project Experience

- Three (3) **roadway lighting** design projects within the past five (5) years only. Design may be for lighting relocation, streetscape, decorative, enhancement or any project demonstrating lighting and coordination with a governmental agency. Include reference (company, name, address and phone number).
- Three (3) **freeway lighting** projects for any state DOT where the design included either (or a combination of) conventional, median or tower/high mast lighting within the past five (5) years only. Job should not be less than \$250,000 in construction cost (electrical work only). Include reference (name of state and that state's DOT project engineer, address and phone number).

Geodetic Control and Leveling-

Surveys for the purpose of establishing horizontal geodetic control meeting Federal Geodetic Control Subcommittee (FGCS) 1st order standards or better, and geodetic differential leveling techniques meeting FGCS 2nd order class 1 standards or better; Blue Booking techniques as defined by FGCS/NGS (National Geodetic Survey) <http://www.ngs.noaa.gov/FGCS/BlueBook/>.

Professional Registrations

Minimum of one (1) Michigan Professional Surveyor.

Safety Policies

Survey safety policy must address at a minimum: Personal Protection Equipment and work zone procedures for maintaining traffic and worker safety language, including reference to OSHA/MIOSHA regulations, and an emergency plan for a typical project or an actual project.

Equipment and Software

Provide a document certifying that you currently operate the equipment and software listed below and that the staff has been trained to properly use the equipment and software to follow the FGCS/NGS methods and standards. List equipment types/models and designate whether it is owned or rented.

- Computers, printers, plotters
- Level(s) – Digital levels meeting FGCS first order standards
- 3 meter level rods with struts, calibrated and loaded in the NGS database, and other leveling accessories meeting FGCS first order standards detailed in the document FGCSVERT (ver. 4.1 5/27/2004) or later
 - Provide date of rod calibrations. Rods must be calibrated every 3 years. Calibration certificate must be current and provided in digital format (RI LOAD)
- Least Square Adjustment software – MDOT Approved Horizontal and Vertical software
- GPS Receivers (minimum 4) – Dual frequency (2004 or newer) and associated processing software
- Fixed height GPS tripods
- Most current version of: WinDesc, Translev, Adjust and Utilities, PAGES.

Staff Education and Experience

Document staff education, school level completed, degree or certification obtained, P.S. license number and date issued if applicable; and list any other qualifications and experience of all key personnel and project managers utilized in your surveying program in a brief introductory bio, including;

- Professional Surveyor in responsible charge (list a minimum of five (5) projects completed in the last eight (8) years) and Survey Crew Chief (list a minimum of three (3) projects completed in the last five (5) years) and relate the information below to each project:
- Experience in geodetic control surveys; horizontal and vertical datums, state plane coordinates; Global Positioning Systems (GPS) methods, processing and analysis. Use of National Spatial Reference System (NSRS) control, and least squares analyses. Knowledge and experience in NGS software including WinDesc, Translev, Adjust and Utilities, PAGES, and OPUS, knowledge and use of the Michigan Spatial Reference Network (MSRN), NGS reduction and submittal process (blue booking) as described in <http://www.ngs.noaa.gov/FGCS/BlueBook/>.
- Survey Crew must have minimum of four (4) individuals with at least two (2) years of documented experience with GPS and field survey methods.
- List NGS training classes attended involving Bluebooking, GPS Processing Workshops, and Digital Level Training Class.
- Information is specific to and directly related to the Geodetic Control & Leveling classification.

Consultant Experience

List a minimum of five (5) projects completed in the past 8 years and relate the information below to each project:

- Narrative description of each project.
- GPS and Level Bluebooking to FGCS/NGS specifications 1st order horizontal or better, 2nd order class II or better for vertical. Use and access of the NSRS including scope and size of the projects, procedures, equipment & software used.
- List the GPS project numbers and the leveling line numbers assigned by NGS to your projects.
- Information is specific to and directly related to the Geodetic Control & Leveling classification.

Hydraulics-

Water surface profile modeling, retention/detention basin design, scour and stream stability analysis, scour counter measure design, structural best management practices design, storm sewer design, hydrologic analysis of stormwater conveyance systems and drainage studies.

Professional Registrations

- Two (2) or more engineers licensed in Michigan.

Equipment

Provide a document certifying that you currently own and that your staff is trained to use the software listed below (Note that each version of software must be identified and must be MDOT's current version):

- Microsoft Office (MDOT's current version)
- MicroStation (MDOT's current version)
- HEC-RAS (MDOT's current version)
- HEC-1 (MDOT's current version)
- HY-8 (MDOT's current version)
- *Eagle Point (MDOT's current version)

Provide a statement certifying your ownership of current versions of the following items and that you have staff that is knowledgeable in the use of these items:

- MDOT Drainage Manual
- MDOT Road Design Manual
- MDOT Bridge Design Manual
- MDEQ "Computing Flood Discharges for Small Ungaged Watersheds"
- TR-55
- AASHTO "Model Drainage Manual"
- Federal Highway Administration's Hydraulic Design Series # 5, 18, 20, 22, and 23
- MDOT PPMS Manual

Staff Education and Experience

- Vendor must list staff's relevant project experience, project responsibilities, and training resumes for all staff providing work in this category. Staff experience gained while working at other firms can be included provided it is noted as such and is relevant to this prequalification category.
- Lead Hydraulic Engineer must have formal training in the required hydraulic computer software and hydraulic design. A minimum of two (2) classes specific to hydraulics and/or required computer programs in the last five (5) years are required. Vendor has provided documentation including date of class, class name, class subject, and training organization.
- Staff engineers must have three (3) years experience performing a range of hydraulic design and analysis including: water surface profile modeling, retention/detention basin design, scour and stream stability analysis, scour counter measure design, structural best management practices design, storm sewer design, hydrologic analysis of stormwater conveyance systems and drainage studies.
- Vendor has provided a list of key staff that has the experience and expertise needed for this prequalification category. MDOT must be notified of any changes key staff.

Consultant Project Experience

- Vendor has completed five (5) projects in the last five (5) years that cover a range of hydraulic engineering projects. Project summaries have been submitted and include the project description, project owner, Department of Environmental Quality (DEQ) permit number (if required), staff responsible for project, and type of hydraulic work. Two (2) of these projects must have hydraulic reports reviewed by the DEQ for compliance with the State's floodplain regulations (Part 31 of NREPA).
- Vendor's projects must demonstrate experience in hydraulic design and analysis as noted in the staff education and experience.
- Vendor's professional engineers have four (4) years experience with AASHTO, FHWA, and MDOT hydraulic standards and have documented experience obtaining permits from State of Michigan permitting agencies.

**Optional*

Hydraulic Surveys-

Surveys for the purpose of determining flood flow and scour characteristics for road culverts and bridges by watercourse and drainage cross-section measurements; flood plain modeling including vegetation changes, water surface elevations; structure opening dimensions and crossing width; building location and first water access elevations; horizontal and vertical control on datums NAD 83 and NAVD 88.

Professional Registrations

Minimum of one (1) Michigan Professional Surveyor.

Safety Policies

Survey safety policy must address at a minimum: Personal Protection Equipment, work zone procedures for maintaining traffic and worker safety language, including reference to OSHA/MIOSHA regulations, and an emergency action plan for a typical project or an actual project.

Equipment and Software

Provide a document certifying that you currently operate and that your staff is trained to use the equipment and software listed below. List equipment types/models and designate whether it is owned or rented. List software and version used (Note that each version of software must be identified by release number and must be MDOT's current version).

- Total Station(s) with Data Collectors – Robotic / Reflectorless / Conventional
- GPS receivers (minimum 3) – Dual frequency and associated processing software - RTK capable
- Level(s) - Digital and/or Automatic
- Computers, printers, plotters
- Least Squares Adjustment software - Horizontal and Vertical
- Data collection software
- Coordinate Geometry software
- At least one of the following options, version 08.11.07.566 (as of October 1, 2012):
 - MicroStation V8i + GEOPAK
 - Bentley Power GEOPAK
 - Bentley Power CIVIL
- *Hec2/HecRas software (Optional)*

Staff Education and Experience

Document education, school level completed, degrees and/or certifications obtained, P.S. license number and date issued if applicable. List any other qualifications and experience of project managers and key personnel utilized in your surveying program in a brief introductory bio. Describe duties specific to each individual, including:

- Professional Surveyor in responsible charge and Survey Crew Chief – these individuals must list a minimum of five (5) projects completed in the last five (5) years. Relate the information below to each project:
 - Experience with hydrographic and hydraulic surveys and concepts, flood plain determination, familiarity with definition of right/left bank and upstream/downstream. Experience with surveys involving horizontal and vertical control, use of NGS control, vertical datums. Extensive experience in: bridge structure nomenclature, radial topographic mapping, traffic control, and terrain. Knowledge and experience in coordinate geometry, bridge surveys, hydraulic survey/analysis, and topographic surveys. Knowledge in the use of MicroStation and/or Power Geopak or Power Civil or CAiCE for hydraulic surveys. The creation of HEC2/HecRas/WisPro data format is a plus, by any method.
- Survey crew must have a minimum of two (2) individuals.
- Minimum of one (1) individual CADD Operator with at least one (1) year experience documented experience using MicroStation and/or Power Geopak or Power Civil for design surveys. Some CAiCE experience is also relevant.

Consultant Experience

List a minimum of five (5) projects completed in the last five (5) years. Project details should be limited to a sentence or two. Survey details should be extensive. Discuss the survey information below for each project:

- Narrative description of the survey for each project.
- Michigan State Plane Coordinate System (NAD83), North American Vertical Datum (NAVD88) and relationship to other vertical datums, bridge structure survey and nomenclature, flood plain determination, radial topographic mapping, hydrographic surveys, hydraulic surveys and concepts such as vegetation change/friction point and first water access.
- Survey deliverables and how they were produced, field to finish.
- Sample project electronic files may be requested by the technical reviewer.

Intelligent Transportation Systems - Design and System Manager-

Design of ITS devices including power and communications infrastructure and System Manager Services for their implementation.

Professional Registrations

- Two (2) or more Civil Engineers licensed in Michigan.

Equipment

Provide a statement certifying your ownership of the software listed below and that your staff is trained to use it. (Note that each version of software must be identified and must be MDOT's current version):

- MicroStation (MDOT's current version)
- TransCAD and Maptitude (MDOT's current version)
- Turbo Architecture (MDOT's current version)

Provide a statement certifying your ownership of current versions of the following items and that you have staff that is knowledgeable in the use of these items:

- MDOT Traffic & Safety Geometric Design Guides
- MDOT Standard Plans
- MDOT Pay Item Code Book
- MDOT Standard Specifications for Construction
- MDOT PPMS Manual
- National Electrical Code (NEC).

Staff Education and Experience

Project Manager-

A minimum of one (1) resume is required for this role.

- Level of education completed. Emphasis in traffic operations is beneficial, as are Masters Degrees in related fields, and PTOE.
- A minimum of five (5) years of ITS experience with at least five (5) projects involving the design of ITS devices.
- List projects showing knowledge of National and MDOT standards and procedures for ITS planning, design, and/or implementation services.

Design Engineer and other staff -

A minimum of two (2) resumes are required for this role. Provide resumes showing the following:

- Level of education completed. Bachelor of Science in Engineering is required.
- If Project Manager is not a Licensed Civil Engineer, then the Lead Design Engineer must be.
- List projects showing knowledge of National and MDOT standards and procedures for ITS planning and design and the National ITS Architecture.
- Project listing should demonstrate a wide range of experience in ITS applications, operations, studies and design including, but not limited to:
 - ITS Architecture
 - ITS Planning and development studies (including long range plans, pre-deployment studies and early deployment plans)
 - ITS Cost/Benefit evaluations
 - Communications technologies for ITS
 - Maintenance planning, estimating and scoping
 - ITS infrastructure and device design
 - Preparation of cost estimates for ITS projects
 - Experience in designing integrated ITS systems based on industry standards to include NTCIP and TCP/IP.
 - Experience and knowledge of engineering services necessary to integrate all of the various components, component systems, subsystems, and services related to ITS systems. These may include, but are not limited to, fiber-optic networking, wireless networking, licensed and unlicensed radio communications, NTCIP protocol, TCP/IP protocol, and Linux and other operating systems.

ITS - Design and System Manager- (continued)

- Understanding of Advanced Traffic Management Systems (ATMS), Advanced Traveler Information Systems (ATIS), Commercial Vehicle Operations (CVO), automated toll collection and border crossings and Rural ITS issues, planning, evaluation, design and implementation
- Understanding and experience with ITS freeway, non-freeway, transit and other applications

System Manager staff -

A minimum of one (1) resume is required for this role. These may be the same staff as provided for Design Engineer/staff. Provide resume(s) showing the following:

- Level of education completed.
- List projects showing knowledge of National and MDOT standards and procedures for ITS planning and design.
- Project listing should demonstrate a wide range of experience in ITS applications, operations, integration, and design including, but not limited to:
 - Communications technologies for ITS
 - ITS infrastructure and device design
 - Oversight of ITS installation and integration contractors for ITS infrastructure projects.
 - Post-design services such as inquiry response, system testing and proofing, and the general management for the procurement of ITS devices as required.
 - Oversight of component and system acceptance tests and working with contractors, integrator, and vendors for performing all tests.
 - Preparation of cost estimates for ITS projects
 - Experience in designing integrated ITS systems based on industry standards to include NTCIP and TCP/IP.
 - Experience and knowledge of engineering services necessary to integrate all of the various components, component systems, subsystems, and services related to ITS systems. These may include, but are not limited to, fiber-optic networking, wireless networking, licensed and unlicensed radio communications, NTCIP protocol, TCP/IP protocol, and Linux and other operating systems.
 - Understanding of Advanced Traffic Management Systems (ATMS), Advanced Traveler Information Systems (ATIS), Commercial Vehicle Operations (CVO), automated toll collection and border crossings and Rural ITS issues, planning, evaluation, design and implementation
 - Understanding and experience with ITS freeway, non-freeway, transit and other applications

Consultant Project Experience

List related projects completed within the past eight (8) years.

- A minimum of five (5) projects must be listed. Projects completed for the Michigan Department of Transportation will be given a higher consideration. Projects with Michigan municipalities where an understanding of MDOT design methodology was demonstrated will also be considered.
- All projects listed for other states should be for other public sector organizations (state Departments of Transportation, local municipalities, transit agencies, etc.).
- For each project to be submitted for evaluation, provide the name and phone number of the owner's representative. This person may be contacted to provide a reference.
- Each project listing shall describe the work performed by the applying firm.

Landscape Architecture-

Consultant services to provide Landscape Architectural Design services for MDOT projects, Landscape Architectural services incorporating Context Sensitive Solutions in their plans that include landscaping and site work associated with rest area buildings, streetscapes, roadside plantings, field offices, garages, maintenance buildings, sound walls, weigh stations, and other structures associated with MDOT operations.

Professional Registrations

- One (1) or more Landscape Architects (RLA) licensed in Michigan.

Equipment

Provide a document certifying that you currently own and that your staff is trained to use the software listed below (Note that each version of software must be identified and must be MDOT's current version):

- MicroStation (MDOT's current version)
- GEOPAK (MDOT's current version)

Staff Education and Experience

- One (1) Registered Landscape Architect with a minimum of four (4) years experience.
- Two (2) CADD technicians with a minimum of two (2) years experience preparing landscape plans according to MDOT specifications.

Provide résumés showing the following:

- Accredited Degree(s) in Landscape Architecture.
- Four (4) years experience preparing plans using MDOT Specifications and plan format in the type of landscaping projects associated with MDOT operations.
- Three (3) projects in past five (5) years that contain design and implementation of plant material focusing on roadside landscape environment. This can include streetscape, wildflowers, native and naturalized materials, wetland materials, annuals, perennials and the impact that the roadside environment has on these plantings.
- Three (3) projects in past five (5) years that include preparation of construction documents that include cost estimating, site development, streetscapes, site grading, project layout, site engineering, and drainage.
- Display knowledge and implementation of projects that include design of American with Disabilities Act (ADA) requirements.

Consultant Project Experience

- Four (4) years experience preparing plans using MDOT Specifications and plan format in the type of landscaping projects associated with MDOT operations.
- Three (3) projects in past five (5) years that contain design and implementation of plant material focusing on roadside landscape environment. This can include streetscape, wildflowers, native and naturalized materials, wetland materials, annuals, perennials and the impact that the roadside environment has on these plantings.
- Three (3) projects in past five (5) years that include preparation of construction documents that include cost estimating, site development, streetscapes, site grading, project layout, site engineering, and drainage.
- Display knowledge and implementation of projects that include design of American with Disabilities Act (ADA) requirements.

Moveable Span Bridges-

Complete structural, electrical, and mechanical designs of Moveable Span Bridges.

Professional Registrations

Two (2) or more engineers licensed in Michigan.

Equipment

Provide a document certifying that you currently own and that your staff is trained to use the software listed below (Note that each version of software must be identified and must be MDOT's current version):

- MicroStation (MDOT's current version)

Provide a statement certifying your ownership of current versions of the following items and that you have staff that is knowledgeable in the use of these items:

- MDOT Bridge Design Manual
- MDOT Bridge Design Guides
- MDOT Standard Plans
- MDOT Pay Item Code Book
- MDOT Standard Specifications for Construction
- MDOT PPMS Manual

Staff Education and Experience

Project Managers -

Two résumés are required for this classification to insure that proper quality assurance will be performed on MDOT projects.

Provide résumés showing the following:

- Accredited Bachelor of Science degrees in Civil, Mechanical and Electrical Engineering.
- Emphasis in structures is a plus, as are Masters degrees and SE registration.
- A minimum of five (5) years experience in the areas being evaluated.
- Knowledge of AASHTO, MDOT, NEC, OSHA, the U.S. Coast Guard and the Michigan Department of Labor standards and procedures.

Other Staff -

Provide résumés showing the following:

- Level of education completed.
- Experience in the areas being evaluated.
- Knowledge of AASHTO, MDOT, NEC, OSHA, the U.S. Coast Guard and the Michigan Department of Labor standards and procedures.
- Consultant and Staff experience in this category reflect exposure to various structure types.
- Consultant and staff should have experience with new construction, as well as bridge rehabilitation.

Consultant Project Experience

- List projects completed within the past eight (8) years.
 - If the projects were completed in Michigan, then a minimum of three (3) projects must be listed. Projects completed for the Michigan Department of Transportation will be given a higher consideration than projects completed for Michigan municipalities. Projects with Michigan municipalities where an understanding of MDOT design methodology was demonstrated will be considered.
 - If the projects were completed in other states a minimum of ten (10) projects must be listed. All projects listed for other states must be for other state Departments of Transportation.
- For each project to be submitted for evaluation, provide the name and phone number of the owner's representative. This person may be contacted to provide a reference.
- Provide a list of current employees involved with the projects to be submitted for evaluation.
- Provide the locations and list of staff of "working" Michigan project office(s).
- Knowledge of AASHTO, MDOT, NEC, OSHA, the U.S. Coast Guard and the Michigan Department of Labor standards and procedures.

Municipal Utilities-

Design of water systems, sanitary sewer, and on-site sewage disposal systems for MDOT projects.

Professional Registrations

Two (2) or more engineers licensed in Michigan.

Equipment

Provide a document certifying that you currently own and that your staff is trained to use the software listed below (Note that each version of software must be identified and must be MDOT's current version):

- MicroStation (MDOT's current version)
- GEOPAK (MDOT's current version)

Staff Education and Experience

- One (1) Michigan Professional Engineer with a minimum of four (4) years of experience in Municipal Utility design in Michigan. This Engineer will be the designated Municipal Utility design coordinator/contact person for the firm.
- Two (2) additional Engineers with a minimum of two (2) years experience preparing Municipal Utility plans. One of these Engineers must also have a Michigan PE.
- Two (2) CADD Technicians with minimum two (2) years experience preparing Municipal Utility plans.
- Provide résumés with a list of Municipal Utilities projects for each staff member:
 - List only projects completed in the past five (5) years.
 - Provide all pertinent information about the projects listed. The name of the client, project description, location, construction cost, and the employee's role on the project. Also, provide the name and phone number of the client's representative. This person may be contacted to provide a reference.

Consultant Project Experience

- One (1) Michigan Professional Engineer with a minimum of four (4) years of experience with the firm preparing Municipal Utility plans and specifications in Michigan.
- Provide a list of projects showing the following experience:
 - Four (4) years experience in Municipal Utility design in Michigan.
 - Four (4) years experience preparing plans using MDOT specifications and plan format. Roadway design experience is included.
 - Four (4) Municipal Utility design projects in the State of Michigan in the last four (4) years. These projects must entail a minimum of 1500 ft of water main and/or sanitary sewer relocation each.

Photogrammetric Control Surveys-

Surveys for the purpose of establishing photogrammetric control for aerial mapping; placement of photogrammetric control and targets; use of GPS, ground traverses, differential leveling techniques; vertical and horizontal datums; familiarity with least squares analysis of survey measurements.

Professional Registrations

Minimum of one (1) Michigan Professional Surveyor

Safety Policies

Survey safety policy must address at a minimum: Personal Protective Equipment and work zone procedures for maintaining traffic, worker safety language including reference to OSHA/MIOSHA regulations, and an emergency plan for a typical project or an actual project.

Equipment and Software

Provide a document certifying that you currently operate and staff is trained to use the equipment and software listed below. List equipment types/models and designate whether it is owned or rented; also list software used and the version available.

- GPS Receivers (minimum 3) – Dual frequency, manufactured in year 2004 or newer and RTK capable
- Associated GPS processing software
- Fixed height GPS tripods
- Total Station(s) with Data Collector(s) – Robotic, Reflectorless, Conventional
- Level(s) – Digital and conventional
- Computers, printers, plotters
- Data collection software
- Least Squares Adjustment software – Horizontal and Vertical
- At least one of the following options: version 08.11.07.566 (as of October 1, 2012).
 - MicroStation V8i + GEOPAK
 - Bentley Power GEOPAK
 - Bentley Power CIVIL

Staff Education and Experience

Document education, school level completed, degrees and/or certifications obtained, P.S. license number and date issued if applicable. List any other qualifications and experience of all key personnel and project managers utilized in your surveying program in a brief introductory bio, including:

- Professional Surveyor in responsible charge (list a minimum of five (5) projects completed in the last eight (8) years) and Survey Crew Chief (list a minimum of three (3) projects completed in the last five (5) years. Relate the information below to each project:
 - Experience involved with aerial mapping, targeting and photogrammetric control surveys for transportation and corridor surveys, ALTA surveys and topographic surveys. Experience also includes photogrammetric targeting schemes and layout; geodetic control surveys; establishing horizontal and vertical datums; state plane coordinates; Global Positioning Systems (GPS) methods, processing and least squares analysis; use of National Geodetic Surveys (NGS) control. Knowledge and experience in traffic control, mapping projections, state plane coordinate zones, scale factors, elevation factors, NGS adjustments and software including OPUS. Knowledge and use of Continuously Operating Reference System (CORS), NGS submittal process (blue booking), NGS control monument research and descriptions, National Spatial Reference System (NSRS) Control, and MicroStation software.
- Survey Crew must have minimum of three (3) individuals with at least two (2) years of experience. Document experience with GPS and field survey methods, photogrammetric targeting schemes and traffic control measures.
- Minimum of one (1) individual CADD Operator with at least one (1) year of experience. Document experience in using MicroStation and CADD software for surveys. Some CAiCE experience may also be relevant.

Photogrammetric Control Surveys - (Continued)

Consultant Experience

List a minimum of five (5) projects completed in the last five (8) years. Project details should be limited to a sentence or two. Survey details should be extensive. Discuss the survey information below for each project:

- Brief narrative description of the survey for each project.
- Extensive survey details to include:
 - Photogrammetric target placement prior to flights; use of aerial photography for photogrammetric target placement and/or identifying pick point objects and surveying target locations.
 - Photogrammetric control surveys including use of Michigan State Plane Coordinate System (NAD83), North American Vertical Datum (NAVD88), knowledge and use of the National Spatial Reference System (NSRS) and OPUS. Knowledge and use of the Continuously Operating Reference System (CORS), Global Positioning System (GPS) methods, processing and least squares analysis. Higher order leveling methods: 1st, 2nd, and 3rd order standards and procedures as well as least squares analysis of data. If the Consultant does not have enough MDOT and transportation/corridor projects, Consultant can list projects for municipalities and private organizations that directly involved photogrammetric control surveys and aerial mapping, or control surveys for mobile scanning.
- Survey deliverables and how they were produced, field to finish.
- Listed information is specific to and directly related to Photogrammetric Control Surveys.
- Sample project electronic files may be requested by the technical reviewer.

Photogrammetry-

Task will include the ability to perform Aerial photography; Analytical Aerial Triangulation; aerial map compilation; merging of aerial mapping with ground survey data; orthometric photo rectification; all supporting maps and documentation.

Professional Certifications

Minimum of one (1) ASPRS Certified Photogrammetrist in responsible charge.

Safety Policies

Photogrammetry safety policy must address at a minimum: Personal Protective Equipment and work zone procedures for maintaining traffic and worker safety language including reference to OSHA/MIOSHA regulations and an emergency plan for a typical project or an actual project.

Equipment and Software

Provide a document certifying that you currently own/rent and that your staff is trained to use the equipment and software listed below. List equipment types/models. List software and version used. Note that all listed software must be identified by version number.

- Aerial triangulation software including strip/block adjustments, strip/bundle adjustments and least squares adjustments and analysis
- Digital film scanner
- Map compilation equipment
 - o Stereoplotters – first order analytic and/or
 - o Digital Softcopy equipment
- Computers, printers, plotters
- Photogrammetric Map Compilation software and CADD software including softcopy, digital graphics, mapping, planimetric, terrain surface processing, ortho-photo production, image processing software
- At least one of the following options:
 - o MicroStation V8i + CAiCE
 - o MicroStation V8i + GEOPAK
 - o Bentley Power GEOPAK
 - o Bentley Power CIVIL
- **Aircraft*
 - o Fixed Wing
 - o Helicopter
- **Aerial camera (format and latest calibration report)*
 - o Metric film 9x9 (calibrated within the last three years)
 - o Digital (calibrated/boresited within the last three years)
- **Photographic lab services for B/W and/or color film processing, printing diapositives, contact prints, etc.*
- **Aerial Flight Planning and Navigation software*
- **Airborne GPS (ABGPS) equipment and ABGPS processing software*
- **IMU (Inertial Measurement Unit)*
- **Light Detection and Ranging (LiDAR) equipment*
- **LiDAR processing and viewing software*
- **GPS Receivers – Dual frequency and associated processing software for use with ABGPS on aircraft*
 - o RTK capable

**Optional*

Photogrammetry- (continued)

Staff Education and Experience

Document education, school level completed, degree or certification obtained, license number and date issued if applicable, and list any other qualifications and experience of all key personnel and project managers utilized in your photogrammetry program including:

- ASPRS Certified Photogrammetrist in responsible charge (list a minimum of five (5) projects completed in the last five (5) years) and relate the information below to each project:
- Experience in highway/corridor mapping, aerial photogrammetric mapping, very low and medium altitude aerial photography, topographic mapping, photogrammetric control surveys, digital ortho-photo production. Airborne Global Positioning Systems (ABGPS) methods, processing and analysis, Light Detection and Ranging (LiDAR).
- Flight crew must have a minimum of one (1) individual with at least three (3) years of experience and at least five (5) projects completed within the last five (5) years
- Minimum of one (1) individual camera operator with at least three (3) years of experience and at least five (5) projects completed within the last five (5) years
- Minimum of one (1) individual film lab manager with at least two (2) years of experience
- Minimum of one (1) individual aerial triangulation specialist with at least three (3) years of experience
- Minimum of one (1) individual map production coordinator with at least five years of experience
- Minimum of two (2) map compilers each with at least two (2) years of experience
- Minimum of one (1) individual CADD operator with at least one (1) year of experience and document experience in using MicroStation and PowerGEOPAK or PowerCIVIL software.
- Company Principal responsible for the photogrammetry program – minimum of (5) years experience in management of a photogrammetry department and with at least five (5) years experience as a project manager.

Staff must demonstrate knowledge and experience in: photogrammetric industry standards including National Standard for Spatial Data Accuracy (NSSDA) and American Society of Photogrammetry and Remote Sensing (ASPRS) standards, photogrammetric project planning, aerial flight planning and targeting schemes, analytical aerial triangulation and least squares adjustments, Softcopy and digital map compilation, digital terrain models, digital terrain mergers, CADD software, PowerGEOPAK or PowerCIVIL software, MicroStation, ortho-photo production, mapping projection changes and transformations, working in English International feet and Metric, ABGPS methods, processing and analysis, state plane coordinate systems and specific experience in Michigan State Plane zones, scale factors and elevation factors, National Geodetic Survey(NGS) monumentation, adjustments and software including OPUS, knowledge and use of the Continuously Operating Reference System (CORS) and specific use of Michigan CORS.

Consultant Experience

List a minimum of five (5) projects, with a narrative description, completed in the last five (5) years and relate the information below to each project:

- Brief survey specific narrative description of each project
- Highway/Corridor mapping, Aerial photogrammetric mapping, Very low and medium altitude aerial photography, Topographic mapping, Photogrammetric Control surveys, Digital Ortho-Photo Production, etc.), ABGPS methods, processing and analysis, and LiDAR. In addition, Consultant experience shall also include experience related to the use of photogrammetric industry standards including NSSDA and ASPRS standards, photogrammetric project planning, aerial flight planning and targeting schemes, analytical aerial triangulation and least squares adjustments, Softcopy and digital map compilation, digital terrain models, photogrammetric terrain and ground survey terrain mergers, CADD software, PowerGEOPAK or PowerCIVIL software, MicroStation, ortho-photo production, mapping projection changes and transformations, working in English International Feet and Metric, ABGPS methods, processing and analysis, Michigan State Plane Coordinate System and zones NAD83/94 and the High Accuracy Reference network (HARN), scale factors, elevation factors, National Geodetic Survey monumentation, adjustments and software including OPUS, knowledge and use of the Continuously Operating Reference System (CORS) and specific use of Michigan CORS.
- Discuss the project deliverables and how they were produced.
- Project information is directly related to the Photogrammetry category

Sample project electronic files may be requested by the technical reviewer

Project Development Studies-

Consultant services to provide location/design/engineering studies of alternatives that are evaluated in conjunction with social, economic and environmental effects to determine the selection of an alignment and design features.

Professional Registrations

One or more engineers licensed in Michigan.

Equipment

Provide a document certifying that you currently own and that your staff is trained to use the software listed below (Note that each version of software must be identified and must be MDOT's current version):

- MicroStation (MDOT's current version)
- GEOPAK (MDOT's current version)

Provide a statement certifying your ownership of current versions of the following items and that staff is knowledgeable in the use of these items:

- AASHTO-A Policy On Geometric Design Of Highways and Streets
- Highway Capacity Manual
- MDOT Road Design Manual
- MDOT Traffic & Safety Geometric Design Guides
- MDOT Standard Plans
- MDOT Standard Specifications for Construction
- MDOT PPMS Manual

Staff Education and Experience

Project Managers-

Documentation detailing the education and experience of project manager, including:

- Accredited Bachelor of Science degree in Civil Engineering.
- Michigan Professional Engineer Registration.
- A minimum of five (5) years experience in Project Development Studies.
- Knowledge of AASHTO and MDOT standards and procedures.

Other Staff-

Provide resumes showing level of education, and experience with AASHTO and MDOT standards, specifications and procedures. Experience on Staff must include:

- Geometric design.
- Right-of-way plans.
- Cost estimates.
- Previous work with MDOT.
- Previous project development experience.
- Public involvement experience.
- Knowledge of MDOT design process steps and elements regarding external review (DEQ, FHWA).

Consultant Project Experience

List projects completed within the past eight (8) years.

- If the projects were completed in Michigan, then a minimum of three (3) projects must be listed. Projects completed for the Michigan Department of Transportation will be given a higher consideration than projects completed for Michigan municipalities. Projects with Michigan municipalities where an understanding of MDOT design methodology was demonstrated will be considered.
- If the projects were completed in other states, a minimum of five (5) projects must be listed. Projects completed in other states will be given lower consideration than projects completed in Michigan, and must be for other state Departments of Transportation.
- If using a combination of MDOT projects and project for other agencies then a minimum of five (5) projects must be listed.

For each project to be submitted for evaluation, provide the name and phone number of the owner's representative. This person may be contacted to provide a reference.

Pump Station Design-

Consultant services for pump station design. Pre-qualification requires expertise in structure, hydraulics and hydrology, mechanical, electrical, HVAC and all other disciplines required for the complete design of a pump station.

Requirements

- Consultant must be Pre-qualified in the following MDOT classifications:
 - **Building and Structure Design*
 - Municipal Utilities
 - Hydraulics

**In lieu of prequalification in the Buildings and Structure Design category:*

The Consultant has provided résumés showing the following:

- *Consultant has one (1) Licensed Engineer in Michigan with four (4) years of experience with the Consultant in preparing structural plans, mechanical plans, and electrical plans associated with a structure.*
- *Consultant has two (2) or more engineers licensed in Michigan, one with a Bachelor of Science degree in Mechanical Engineering (BSME) and one with a Bachelor of Science degree in Electrical Engineering (BSEE).*
- *Consultant has performed three (3) projects in the last two (2) years that include preparation of construction documents that include structural engineering, electrical engineering, mechanical engineering, and cost estimating associated with a structure such as a pump station or similar facility.*
 - *Consultant has provided all pertinent information about the projects listed. The name of the client, project description, location, construction cost, and the employee's role on the project. Consultant has also provided the name and phone number of the client's representative. This person may be contacted to provide a reference.*

By meeting the Requirements listed above, the applicant will be approved for Pump Station Design.

Railroad Bridges-

Structures carrying railroads over roadways.

Professional Registrations

Two (2) or more engineers licensed in Michigan.

Equipment

Provide a document certifying that you currently own and that your staff is trained to use the software listed below (Note that each version of software must be identified and must be MDOT's current version):

- MicroStation (MDOT's current version)

Provide a statement certifying your ownership of current versions of the following items and that you have staff that is knowledgeable in the use of these items:

- AASHTO Standard Specifications for Highway Bridges or LRFD Manual
- AREA Manuals
- MDOT Bridge Design Manual
- MDOT Bridge Design Guides
- MDOT Standard Plans
- MDOT Pay Item Code Book
- MDOT Standard Specifications for Construction
- MDOT PPMS Manual

Staff Education and Experience

Project Managers-

Two résumés are required for this classification to insure that proper quality control will be performed on MDOT projects.

Provide résumés showing the following:

- Level of education completed.
- Emphasis in structures is a plus, as are Masters degrees and SE registration.
- A minimum of five (5) years experience in Railroad Bridge Design.
- Knowledge of AASHTO, AREA and MDOT standards and procedures.

Other Staff-

Provide résumés showing the following

- Level of education completed.
- Experience in Railroad Bridge Design.
- Knowledge of AASHTO and MDOT standards and procedures.

Consultant Project Experience

- List projects completed within the past eight (8) years.
 - If the projects were completed in Michigan then a minimum of three (3) projects must be listed. Projects completed for the Michigan Department of Transportation will be given a higher consideration than projects completed for Michigan municipalities. Projects with Michigan municipalities where an understanding of MDOT design methodology was demonstrated will be considered.
 - If the projects were completed in other states, a minimum of five (5) projects must be listed.
 - If you are using a combination of MDOT projects and projects for other agencies then a minimum of five (5) projects must be listed
- For each project to be submitted for evaluation, provide the name and phone number of the owner's representative. This person may be contacted to provide a reference.
- Provide a list of current employees involved with the projects to be submitted for evaluation.
- Knowledge of AASHTO and MDOT standards and procedures.
- Consultant and staff should have experience with new construction, as well as bridge rehabilitation.

Right-of-Way Surveys-

Surveys for the purpose of determining the location of legal roadway alignment; location of right-of-way boundaries; location of adjacent property and plat boundaries; interpretation of property descriptions; writing property descriptions; government corner location, re-establishment and recording; ROW staking and monumentation.

Professional Registrations

Minimum of one (1) Michigan Professional Surveyor.

Safety Policies

Survey safety policy must address at a minimum: Personal Protection Equipment and work zone procedures for maintaining traffic and worker safety language, including reference to OSHA/MIOSHA regulations, and an emergency plan for a typical project or an actual project.

Equipment

Provide a document certifying that you currently operate and that your staff is trained to use the equipment and software listed below. List equipment types/models and designate whether it is owned or rented. List software and version used. Note that all listed software must be identified by version number.

- Total Station(s) with Data Collectors – Robotic / Reflectorless / Conventional
- GPS receivers (minimum 3) – Dual frequency and associated processing software - RTK capable
- Computers, printers, plotters
- Least Squares Adjustment software
- Data collection software
- Coordinate Geometry software
- At least one of the following options, version 08.11.07.566 (as of 1 October 2012):
 - MicroStation V8i + GEOPAK
 - Bentley Power GEOPAK
 - Bentley Power CIVIL

Staff Education and Experience

Document education, school level completed, degrees and/or certifications obtained, P.S. license number and date issued if applicable. List any other qualifications and experience of all project managers and key personnel utilized in your surveying program in a brief introductory bio. Describe duties specific to each individual.

- Professional Surveyor in responsible charge and Survey Crew Chief – list a minimum of five (5) projects completed in the last five (5) years. Relate the information below to each project:
 - Work histories involving Right-Of-Way, legal alignment, and property determinations; property surveys, ALTA surveys, topographic surveys, etc. Also any involvement in property related expert witness testimonies, land title work and research. Knowledge and experience in coordinate geometry (COGO) and state plane coordinate use, least squares and analysis of control networks; and the use of MicroStation and Power Geopak or Power Civil for design surveys; knowledge and experience with survey law (PA 132 of 1970, PA 74 of 1970 as amended, PA 345 of 1990, etc.), US PLSS and government land office history, notes and procedures. Some CAiCE experience is also relevant.
- Minimum of two (2) individuals for the survey crew.
- Minimum of one (1) individual CADD operator with at least one (1) year experience, documented, in using MicroStation and Power Geopak, Power Civil, for survey data processing. Some CAiCE experience is also relevant.

Consultant Project Experience

List a minimum of five (5) projects completed in the last five (5) years. Project details should be limited to a sentence or two. Survey details should be extensive. Discuss the survey information below for each project:

- Brief narrative description of the survey for each project.
- Extensive survey details from projects involving work experience with horizontal control and Michigan State Plane Coordinate System (NAD83); US Public Land Survey System; subdivision plats, condominium boundaries, metes and bounds described parcels and other property boundary related projects. Projects involving previous Right-Of-Way surveying through MDOT Design or Real Estate, MDOT Local Services, counties or municipalities. Research and retracement of legal roadway alignment and Right-Of-Way for any government agency; land title work and research; property boundary research, retracement, and determination; topographic survey for development; power line surveys; Act 132 Certificates of Survey, etc.
- Discuss survey deliverables and how they were developed, field to finish.
- Information is directly related to Right of Way Surveys.
- Sample project electronic files may be requested by the technical reviewer.

Road Design Surveys-

Surveys for the purpose of establishment of horizontal and vertical control for project design and construction; topographic mapping; utility location; drainage studies; government corner and property location; alignment determination; safety management and traffic control; supporting maps and documentation. *Right-Of-Way Survey pre-qualification is recommended. Without it, a firm will have fewer opportunities for projects that include USPLSS and Right Of Way components.*

Professional Registrations

Minimum of one (1) Michigan Professional Surveyor.

Safety Policies

Survey safety policy must address at a minimum: Personal Protective Equipment and work zone procedures for maintaining traffic, worker safety language including reference to OSHA/MIOSHA regulations, and an emergency plan for a typical project or an actual project.

Equipment and Software

Provide a document certifying that you currently operate and that your staff is trained to use the equipment and software listed below. List equipment types/models and designate whether it is owned or rented. List software and version used. Note that each version of software must be identified by release number.

- Total Station(s) with Data Collectors – Robotic / Reflectorless / Conventional
- GPS receivers (minimum 3) – Dual frequency and associated processing software - RTK capable
- Level(s) - Digital and/or Automatic
- *Laser scanner and associated processing software (optional)*
- Computers, printers, plotters
- Least Squares Adjustment software - Horizontal and Vertical
- Data collection software
- Coordinate Geometry software
- At least one of the following options, version 08.11.07.566 (as of October 1, 2012):
 - MicroStation V8i + GEOPAK
 - Bentley Power GEOPAK
 - Bentley Power CIVIL

Staff Education and Experience

Document education, school level completed, degrees and/or certifications obtained, P.S. license number and date issued if applicable. List any other qualifications and experience of project managers and key personnel utilized in your surveying program in a brief introductory bio. Describe duties specific to each individual:

- Professional Surveyor in responsible charge and Survey Crew Chief – list a minimum of five (5) projects completed in the last five (5) years. Briefly relate the information below to each project:
 - Experience in work with state plane coordinates and various datums, surveys involving horizontal and vertical control, use of NGS control. (i.e.: Power Line Surveys, Topographic Surveys, etc.), least squares analysis, retracement of roadway alignment and Right-Of-Way, traffic control, photogrammetric control and mapping knowledge, radial topographic mapping, terrain mapping, underground and surface drainage study, base plan preparation, knowledge and experience in US PLSS, coordinate geometry, and the use of MicroStation and/or Power Geopak or Power Civil for survey data processing, mapping and terrain modeling for design surveys. Some CAiCE experience is also relevant.
- Survey crew must have a minimum of two (2) individuals.
- Minimum of one (1) individual CADD operator with at least one (1) year experience, documented, in using MicroStation and Power Geopak or Power Civil for survey data processing, mapping and terrain modeling. Some CAiCE experience is also relevant.

Road Design Surveys- (continued)

Consultant Experience

List a minimum of five (5) projects completed in the last five (5) years. Project details should be limited to a sentence or two. Survey details should be extensive. Discuss the survey information below for each project:

- Brief narrative description of the survey for each project.
- Extensive survey details to include: horizontal and vertical control, Michigan State Plane Coordinate System (NAD83), North American Vertical Datum (NAVD88), topographic survey for roads and development, plats, government corners, research and retracement of roadway alignment and Right-Of-Way, county road determination (ROW/alignment), traffic control, terrain mapping and digital terrain modeling, underground and surface utility/drainage study, photogrammetric control and mapping knowledge, laser and/or mobile scanning and mapping, and base plan preparation.
- Survey deliverables and how they were produced, field to finish.
- Information is directly related to Road Design Surveys
- Sample project electronic files may be requested by the technical reviewer.

Roads & Streets-

3R work on non-freeways which include mill & resurface, bridge approach work, concrete joint repair, safety upgrades, shoulder widening, shoulder paving or other work along existing alignment within the existing ROW, including log plans.

Professional Registrations

Two (2) or more engineers licensed in Michigan.

Equipment

Provide a document certifying that you currently own and that your staff is trained to use the software listed below (Note that each version of software must be identified and must be MDOT's current version):

- Microsoft Office
- MicroStation
- GEOPAK
- Critical Path Software. **Microsoft Project is recommended but not required.* The software must be capable of producing the printout to be submitted with the plans in a bar chart format.

Provide a statement certifying your ownership of current versions of the following items and that you have staff that is knowledgeable in the use of these items:

- MDOT Road Design Manual
- MDOT Drainage Manual
- MDOT Traffic & Safety Geometric Design Guides
- MDOT Standard Plans
- MDOT Pay Item Code Book
- MDOT Standard Specifications for Construction
- MDOT PPMS Task Manual
- AASHTO "A Policy on Geometric Design of Highways and Streets, 2004"
- AASHTO "Roadside Design Guide, 2002"

Staff Education and Experience

Project Managers-

A minimum of two (2) résumés are required for this classification to insure that proper quality control will be performed on MDOT projects.

Provide résumés showing the following:

- Level of education completed.
- A minimum of five (5) years experience in Roads and Streets.
- Provide a list of projects for each staff member:
 - List only projects completed in the past five (5) years.
 - Provide all pertinent information about the projects listed. The name of the client, project description, location, construction cost, and the employee's role on the project. Also, provide the name and phone number of the client's representative. This person may be contacted to provide a reference.
 - Knowledge of AASHTO and MDOT standards and procedures.

Other Staff-

A minimum of two (2) engineers and/or CADD technicians.

Provide résumés showing the following

- Level of education completed.
- Experience in Roads and Streets.
- Knowledge of AASHTO and MDOT standards and procedures.

Roads & Streets- (Continued)

Consultant Project Experience

- The Consultant must demonstrate the ability to submit a set of MDOT road plans for Roads and Streets with appropriate specifications. Do not submit plans.
- List projects completed within the past eight (8) years.
 - If the projects were completed for MDOT then a minimum of three (3) projects must be listed. Projects completed for the Michigan Department of Transportation will be given a higher consideration than projects completed for other agencies. Projects with Michigan municipalities where an understanding of MDOT design methodology was demonstrated will be considered.
 - If the projects were completed in other states, a minimum of five (5) projects must be listed. All projects listed for other states must be for other state Departments of Transportation.
 - If you are using a combination of MDOT projects and project for other agencies then a minimum of five (5) projects must be listed.
- For the project descriptions, please highlight the following information:
 - Roads and Streets projects designed by the firm or where the firm was a sub Consultant and the firm's role.
 - The projects compliance with AASHTO and MDOT standards, specifications, and procedures.
 - Drainage studies and design, if any.
 - Cost estimates performed and use of Stand Alone Estimator's Worksheet (SAEW).
 - Stage construction plans/maintaining traffic coordination.
 - Geometric improvements, if any.
 - Right-Of-Way plans.
 - Construct critical paths based upon staging (CPM).
- For each project to be submitted for evaluation, provide the name and phone number of the owner's representative. This person may be contacted to provide a reference.
- Provide a list of current employees involved with the projects to be submitted for evaluation.

All Consultants approved for Complex Urban Freeways will also be granted approval for Roadway Rehabilitation & Rural Freeways and Roads and Streets with or without application.

All Consultants approved for Roadway Rehabilitation & Rural Freeways will also be granted approval for Roads and Streets with or without application.

**Optional*

Roadway Rehabilitation & Rural Freeways-

4R work including major reconstruction projects on non-freeway roadways and 3R & 4R rural freeway mill & resurface/reconstruct projects in rural and suburban areas with grade separations, interchanges, ramp acceleration & deceleration lanes. The work may include geometric improvements, drainage improvements, revised horizontal and vertical alignments, utility conflicts, ROW acquisition and complex staging up to and including full boulevard construction/reconstruction on a new alignment.

Professional Registrations

Two (2) or more engineers licensed in Michigan.

Equipment

Provide a document certifying that you currently own and that your staff is trained to use the software listed below (Note that each version of software must be identified and must be MDOT's current version):

- Microsoft Office
- MicroStation
- GEOPAK
- Critical Path Software. **Microsoft Project is recommended but not required.* The software must be capable of producing the printout to be submitted with the plans in a bar chart format.

Provide a statement certifying your ownership of current versions of the following items and that you have staff that is knowledgeable in the use of these items:

- MDOT Road Design Manual
- MDOT Drainage Manual
- MDOT Traffic & Safety Geometric Design Guides
- MDOT Standard Plans
- MDOT Pay Item Code Book
- MDOT Standard Specifications for Construction
- MDOT PPMS Task Manual
- AASHTO "A Policy on Geometric Design of Highways and Streets, 2004"
- AASHTO "Roadside Design Guide, 2002"
- AASHTO "A Policy on Design Standards Interstate System, 2005"

Staff Education and Experience

Project Managers-

A minimum of three (3) résumés are required for this classification to insure that proper quality control will be performed on MDOT projects.

Provide résumés showing the following:

- Level of education completed.
- A minimum of five (5) years experience in Roadway Rehabilitation and Rural Freeways.
- Provide a list of projects for each staff member:
 - List only projects completed in the past five (5) years.
 - Provide all pertinent information about the projects listed. The name of the client, project description, location, construction cost, and the employee's role on the project. Also, provide the name and phone number of the client's representative. This person may be contacted to provide a reference.
 - Knowledge of AASHTO and MDOT standards and procedures.

Other Staff –

A minimum of three (3) engineers and/or CADD technicians.

Provide résumés showing the following

- Level of education completed.
- Experience in Roadway Rehabilitation & Rural Freeways.
- Knowledge of AASHTO and MDOT standards and procedures.

Roadway Rehabilitation & Rural Freeways- (Continued)

Consultant Project Experience

- The Consultant must demonstrate the ability to submit a set of MDOT road plans which include title sheet, typical, note and plan view with appropriate specifications, profiles, proposed ROW, utilities, and difficult staging. Do not submit plans.
- List projects completed within the past eight (8) years.
 - If the projects were completed for MDOT then a minimum of three (3) projects must be listed. Projects completed for the Michigan Department of Transportation will be given a higher consideration than projects completed for other agencies. Projects with Michigan municipalities where an understanding of MDOT design methodology was demonstrated will be considered.
 - If the projects were completed in other states, a minimum of five (5) projects must be listed. All projects listed for other states must be for other state Departments of Transportation.
 - If you are using a combination of MDOT projects and project for other agencies then a minimum of five (5) projects must be listed.
- For the project write-ups, please highlight the following information:
 - Roadway Rehabilitation & Rural Freeways projects designed by the firm or where the firm was a sub Consultant and the firm's role.
 - The projects compliance with AASHTO and MDOT standards, specifications, and procedures.
 - Drainage studies and design, if any.
 - Cost estimates performed and use of Stand Alone Estimator's Worksheet (SAEW).
 - Stage construction plans / maintaining traffic coordination.
 - Geometric improvements, if any.
 - Right-Of-Way plans.
 - Construct critical paths based upon staging (CPM).
- For each project to be submitted for evaluation, provide the name and phone number of the owner's representative. This person may be contacted to provide a reference.
- Provide a list of current employees involved with the projects to be submitted for evaluation.

All Consultants approved for Complex Urban Freeways will also be granted approval for Roadway Rehabilitation & Rural Freeways and Roads and Streets with or without application.

All Consultants approved for Roadway Rehabilitation & Rural Freeways will also be granted approval for Roads and Streets with or without application.

**Optional*

Short & Medium Span Bridges-

Multi-Span bridges; span lengths to 300 feet, includes small span bridges and Box Culverts.

Professional Registrations

Two (2) or more engineers licensed in Michigan.

Equipment

Provide a document certifying that you currently own and that your staff is trained to use the software listed below (Note that each version of software must be identified and must be MDOT's current version):

- MicroStation (MDOT's current version)

Provide a statement certifying your ownership of current versions of the following items and that you have staff that is knowledgeable in the use of these items:

- AASHTO Standard Specifications for Highway Bridges or LRFD Manual
- MDOT Bridge Design Manual
- MDOT Bridge Design Guides
- MDOT Standard Plans
- MDOT Pay Item Code Book
- MDOT Standard Specifications for Construction
- MDOT PPMS Manual

Staff Education and Experience

Project Managers-

A minimum of two résumés are required for this classification to insure that proper quality control will be performed on MDOT projects.

Provide résumés showing the following:

- Level of education completed.
- Emphasis in structures is a plus, as are Masters Degrees and SE registration.
- A minimum of five (5) years experience in Short & Medium Span Bridge Design.
- Knowledge of AASHTO and MDOT standards and procedures.

Other Staff –

Provide résumés showing the following:

- Level of education completed.
- Experience in Short & Medium Span Bridge Design.
- Knowledge of AASHTO and MDOT standards and procedures.

Consultant Project Experience

Consultant and Staff experience in this category reflect exposure to various structure types.

Consultant and staff should have experience with new construction, as well as bridge rehabilitation.

- List projects completed within the past eight (8) years.
 - If the projects were completed in Michigan then a minimum of three (3) projects must be listed. Projects completed for the Michigan Department of Transportation will be given a higher consideration than projects completed for Michigan municipalities. Projects with Michigan municipalities where an understanding of MDOT design methodology was demonstrated will be considered.
 - If the projects were completed in other states, a minimum of ten (10) projects must be listed. All projects listed for other states must be for other state Departments of Transportation.
 - If you are using a combination of MDOT projects and projects for other agencies then a minimum of ten (10) projects must be listed.
- For each project to be submitted for evaluation, provide the name and phone number of the owner's representative. This person may be contacted to provide a reference.
- Provide a list of current employees involved with the projects to be submitted for evaluation.
- Knowledge of AASHTO and MDOT standards and procedures.

All Consultants approved for Complex Bridge Design will also be granted approval for Short & Medium Span Bridge Design with or without application.

Specialty Walls/Slopes-

Counterfort walls, mechanically stabilized earth, stabilized slopes, soil nailing, etc.

Professional Registrations

Two (2) or more engineers licensed in Michigan.

Equipment

Provide a document certifying that you currently own and that your staff is trained to use the software listed below (Note that each version of software must be identified and must be MDOT's current version):

- MicroStation (MDOT's current version)

Provide a statement certifying your ownership of current versions of the following items and that you have staff that is knowledgeable in the use of these items:

- AASHTO Standard Specifications for Highway Bridges or LRFD Manual
- MDOT Bridge Design Manual
- MDOT Bridge Design Guides
- MDOT Standard Plans
- MDOT Pay Item Code Book
- MDOT Standard Specifications for Construction
- MDOT PPMS Manual

Staff Education and Experience

Project Managers-

A minimum of two (2) résumés are required for this classification to insure that proper quality assurance will be performed on MDOT projects.

Provide résumés showing the following:

- Level of education completed.
- Curriculum should show an emphasis in Geotechnical and structures. Masters degrees with Geotechnical emphasis a plus.
- A minimum of five (5) years experience in Specialty Walls/Slopes.
- Knowledge of AASHTO and MDOT standards and procedures.

Other Staff –

Provide résumés showing the following

- Level of education completed.
- Experience in Specialty Walls/Slopes.
- Knowledge of AASHTO and MDOT standards and procedures.

Consultant Project Experience

Consultant and Staff experience in this category reflect exposure to various structure types.

Consultant and staff should have experience with new construction, as well as rehabilitation.

- List projects completed within the past eight (8) years.
 - If the projects were completed in Michigan then a minimum of five (5) projects must be listed. Projects completed for the Michigan Department of Transportation will be given a higher consideration than projects completed for Michigan municipalities. Projects with Michigan municipalities where an understanding of MDOT design methodology was demonstrated will be considered.
 - If the projects were completed in other states, a minimum of ten (10) projects must be listed. All projects listed for other states must be for other state Departments of Transportation.
 - If you are using a combination of MDOT projects and projects for other agencies then a minimum of ten (10) projects must be listed.
- For each project to be submitted for evaluation, provide the name and phone number of the owner's representative. This person may be contacted to provide a reference.
- Provide a list of current employees involved with the projects to be submitted for evaluation.
- Knowledge of AASHTO and MDOT standards and procedures.

Structure Surveys-

Surveys for the purpose of reporting bridge structure dimensions; underclearances, elevations of footings, abutments, piers; topographic mapping and digital terrain modeling; utility location; drainage studies; government corner and property location; alignment determination; safety management and traffic control; establishment of horizontal and vertical control for project survey, design and construction; all supporting maps and documentation. *Hydraulic Survey pre-qualification is recommended. Without it, a firm will have fewer opportunities for projects that span streams and drains.*

Professional Registrations

Minimum of one (1) Michigan Professional Surveyor

Safety Policies

Survey safety policy must address at a minimum: Personal Protective Equipment and work zone procedures for maintaining traffic, worker safety language including reference to OSHA/MIOSHA regulations, and an emergency plan for a typical project or an actual project.

Equipment and Software

Provide a document certifying that you currently operate and that your staff is trained to use the equipment and software listed below. List equipment types/models and designate whether it is owned or rented. List software and version used - Note that each version of software must be identified by release number:

- Total Station(s) with Data Collectors – Robotic / Reflectorless / Conventional
- GPS receivers (minimum 3) – Dual frequency and associated processing software - RTK capable
- Level(s) - Digital and/or Automatic
- *Laser scanner and associated processing software (optional)*
- Computers, printers, plotters
- Least Squares Adjustment software - Horizontal and Vertical
- Data collection software
- Coordinate Geometry software
- At least one of the following options, version 08.11.07.566 (as of October 1, 2012):
 - MicroStation V8i + GEOPAK
 - Bentley Power GEOPAK
 - Bentley Power CIVIL

Staff Education and Experience

Document education, school level completed, degrees and/or certifications obtained, P.S. license number and date issued if applicable. List any other qualifications and experience of project managers and key personnel utilized in your surveying program in a brief introductory bio. Describe duties specific to each individual.

- Professional Surveyor in responsible charge and Survey Crew Chief – these individuals must list a minimum of five (5) projects completed in the last five (5) years. Relate the information below to each project:
- Experience in radial topographic mapping, underground and surface drainage study, traffic control, terrain mapping, base plan preparation, knowledge and experience in US PLSS, coordinate geometry, least squares analysis, the use of MicroStation and/or Power Geopak or Power Civil for Design Surveys, knowledge and experience with bridge structure nomenclature, typical structure measurements and deliverables, traffic control, work history documenting types of work performed (i.e. Hydraulic Surveys, Topographic Surveys, etc.). Some CAiCE experience is relevant.
- Survey Crew must have a minimum of two (2) individuals.
- Minimum of one (1) individual CADD operator with at least one (1) year experience and document experience in using MicroStation and Power Geopak, Power Civil for structure surveys. Some CAiCE experience is relevant.

Structure Surveys- (continued)

Consultant Experience

List a minimum of five (5) projects completed in the last five (5) years. Project details should be limited to a sentence or two. Survey details should be extensive. Discuss the survey information below for each project:

- Brief narrative description of the survey for each project.
- Extensive survey details to include: horizontal and vertical control, Michigan State Plane Coordinate System (NAD83), North American Vertical Datum (NAVD88); knowledge and use of bridge schematics and nomenclature, terrain mapping and modeling, laser scanning, topographic survey for development, government corners, riparian property ownership, traffic control, base plan preparation, etc. Road design survey, right of way survey, and hydraulic survey experience is a plus.
- Survey deliverables and how they were produced, field to finish.
- Information is directly related to Structure Surveys.
- Sample project electronic files may be requested by the technical reviewer.

Value Engineering-

A systematic multi-discipline team review of function, cost, and worth to identify where these are out of balance and to develop alternatives to increase value in a product or service by accomplishing the same function more effectively. Value Engineering is not a cost reduction, which saves money by not providing the original function.

Certifications

A minimum of one (1) Certified Value Specialist (CVS) or equivalent by SAVE International or equivalent who will serve as VE facilitator.

Equipment

- Submit a list of equipment with ability to read MicroStation CADD files.
- If your firm is applying for VE renewal – state that your firm's equipment capability to read MicroStation CADD files remains unchanged, or list equipment no longer owned that decreases your ability to read MicroStation CADD files.

Staff Education and Experience

Facilitator –

Must have a minimum of one (1) facilitator who is a Certified Value Specialist or equivalent by SAVE International or equivalent.

- Each facilitator must list at least three (3), but not more than five (5), VE studies they have led in the past three (3) years. VE studies for both MDOT and other transportation agencies are desired.
- The name and phone number of the owner's representative for each of the VE studies must be listed.
- One copy of a recent final VE report for each facilitator must be provided. For any VE studies performed for MDOT, instead only list the route, location, month and year.
- Provide documentation that each facilitator is on staff or that the Consultant has a valid written agreement stating that the facilitator will be available for work upon request.

Staff-

A minimum of four (4) potential VE team members must be listed, along with a brief list of their area of expertise and personal participation experience in previous VE studies.

Consultant Experience

- Submit documentation of at least three (3) previous VE studies conducted in the past three (3) years. For any VE studies performed for MDOT, only list the route, location, month and year.
- Provide the name and phone number of the owner's representative for each of the VE studies.
- Provide copies of final VE reports for two (2) of the three (3) studies referenced in this section. For any VE studies performed for MDOT, only list the route, location, month and year.
- Or if no experience, provide a written explanation of how the VE study should be performed (not to exceed 5 pages).

Wetland Design-

Consultant services to provide Wetland Design for MDOT wetland mitigation and design projects located within MDOT Right-Of-Way (ROW).

Professional Registrations

- One (1) Registered Landscape Architect (RLA) licensed in Michigan and one (1) Michigan Professional Engineer

Equipment

Provide a document certifying that you currently own and that your staff is trained to use the software listed below (Note that each version of software must be identified and must be MDOT's current version):

- MicroStation (MDOT's current version)
- GEOPAK (MDOT's current version)

Staff Education and Experience

Provide résumés showing the following:

- One (1) RLA, with a minimum of four (4) years experience in Wetland Design and implementation.
- One (1) Registered Professional Engineer (PE), with a minimum of four (4) years experience in Wetland Design and implementation.
- Two (2) CADD technicians with a minimum of two (2) years experience preparing wetland plans according to MDOT specifications.
- Four (4) years experience preparing plans using MDOT Specifications and plan format.
- Three (3) projects in past five (5) years that display knowledge of cost estimating, plant selection, site grading and drainage with relation to wetland design, wetland planting, wetland engineering and development of water control structures. Must also display knowledge and competence in preparation and development of a water budget and use in construction and implementation of that wetland development.
- Desired to have staff or display experience/or additional degrees with Natural Resources, Physical Sciences, Hydrogeology and Biology.
- Staff displays experience with technical components of wetland design. (Plan preparation, water budget evaluations, wetland planting design, soils, vegetation, and hydrology).

Consultant Project Experience

- Four (4) years experience preparing plans using MDOT Specifications and plan format in the type of landscaping projects associated with MDOT operations.
- Three (3) projects in past five (5) years that display knowledge of cost estimating, plant selection, site grading and drainage with relation to wetland design, wetland planting, wetland engineering and development of water control structures.
- Three (3) projects in past five (5) years that display knowledge and competence in preparation and development of a water budget and use in construction and implementation of that wetland development.
- Two (2) projects in Michigan that can be demonstrated to meet the pre-plan mitigation requirements.

Transportation Planning Services Group

Botanical and Endangered Plant Assessment-

The type of work performed by Consultants prequalified for botanical and endangered plant assessment includes: being able to perform surveys of proposed transportation projects to identify plants species, assess their population size and describe their critical habitat by type, size and quality. The Consultant must be able to identify all species of plants that are known to occur in Michigan and the surrounding Great Lakes Region. This also includes all plants that are on either the federal list of threatened (T), endangered (E) or candidate species as well as the state list for all T/E/special concern species. The ability to assess the population size of any listed species identified and the habitat attributes that are required in its life cycle and ecology. The educational, training, and work experience required to conduct botanical surveys and impact evaluations are principally concentrated in the science of Botany with a special emphasis in plant taxonomy and plant ecology. The services of an engineer are not required.

Permits

Submit a copy of a valid Michigan Threatened/Endangered Species permit. These permits are granted from the Michigan Department of Natural Resources

Staff Education and Experience

- Only submit for the individual personnel performing work in this category, a copy of degree in botany or a related botanical field and copies of any additional professional registrations or training.

Consultant Project Experience

- Submit a paragraph for at least three (3) projects and no more than five (5), describing only project experience relating to T/E botanical field surveys and report preparation for highway development projects in the past five (5) years.
- Submit a paragraph for at least one (1) and no more than five (5) projects describing experience with the Upper Great Lakes Region flora and ecology for the past five (5) years.
- Submit a paragraph for at least one (1) and no more than five (5) projects describing experience with field reviews, impact analysis and agency reviews regarding road building projects with T/E flora species impacts for the past five (5) years.
- Submit a one (1) page written description for each project (REQUIREMENT: at least THREE and no more than TEN projects) confirming experience in construction projects relevant to assessment of T/E flora species including: field surveys/procedures followed, permitting requirements and describe specific work performed with resource agencies and final documents prepared for the past (5) five years.
- Submit written statements from non-MDOT clients, review agencies and resource agencies for at least three (3) projects submitted above certifying their satisfaction with the work your organization performed in this category.

Environmental Assessment and Impact Statements – Surface Transportation -

The types of work performed by Consultants pre-qualified in this classification include the identification, analyses, and documentation of potential impacts of proposed surface transportation projects. The Consultant should have thorough familiarity with Federal Highway Administration Technical Advisory T 6640.8A and other regulations and guidance memoranda regarding preparation of environmental assessments and impact statements. Working familiarity with applicable social, economic, and environmental considerations to be evaluated and analyzed is a requirement. The Consultant should have technical expertise on staff to clearly differentiate and define the significance of various impacts. Ability to prepare and complete a readable and understandable document is essential. *Interdisciplinary team is required for performance of these tasks*, because they involve education, training, and experience working in the biological, earth, social, and behavioral sciences, and engineering fields.

Professional Registrations

Statement certifying one key person on staff is a Registered Professional Engineer.

Staff Education and Experience

- Submit a resume for key personnel on the interdisciplinary team of professionals for NEPA projects (must have a minimum of three years experience in NEPA projects), detailing professional qualifications, specific to environmental, social and economic analyses, along with education and additional training. A Bachelor's Degree is required.
- Project Manager must submit a resume detailing experience overseeing the development of major action documents - such as Environmental Assessments and/or Environmental Impact Statements. The Project Manager must have overseen a minimum of three (3).

Consultant Project Experience

- Submit at least one (1) completed Environmental Impact Statement or Environmental Assessment specific to a surface transportation related project on a CD.
Note: Only necessary for newly prequalified or for those that have experienced a staffing change.
- Submit a paragraph for at least one (1) and no more than ten (10) project(s) identifying roles and responsibilities specific to surface transportation related projects completed for the last ten (10) years.
- Submit at least one (1) document in which your staff was responsible for analyzing all environmental, social and economic issues related to the project.
- Submit written statements from non-MDOT clients, review agencies and/or resource agencies for at least three (3) projects submitted above certifying their satisfaction with the work your organization performed in this category.

Geographic Information Systems-

Work in the GIS field requires a general knowledge of geography, navigation, computing, database management, photogrammetry, cartography, and statistical analysis. *It does not require any specific knowledge of engineering.*

Equipment

- Submit a statement certifying the Consultant has the following equipment: GIS application software, GPS equipment, and plotters.

Staff Education and Experience

- Submit a statement from each individual key personnel performing this type of work detailing qualifications, education and training.

Consultant Project Experience

- Submit a written paragraph listing at least seven (7) projects within the last five (5) years demonstrating your proficiency in GIS.
- Submit written statements from non-MDOT clients, review agencies and/or resource agencies for at least three (3) projects submitted above certifying their satisfaction with the work your organization performed in this category.

Historic Archaeology-

The types of work performed by Consultants prequalified for Historic Archaeology includes being able to perform professional historic archaeological research, land-use histories, Phase I Archaeological Site Location Surveys of historic archaeological resources, Phase II Archaeological Site Evaluation of historic archaeological resources, Phase III Archaeological Site Mitigations of historic archaeological resources. Meet or surpass requirements of Section 106 of the National Historic Preservation Act of 1966, as amended, to professionally perform historic archaeological work; determine National Register of Historic Places eligibility for prehistoric archaeological properties; and, using archaeologists whose professional qualifications for performance of historic archaeology meets or surpasses the Secretary of the Interior's regulations (48-FR-44738-9).

Professional Registrations

- The Project Manager and Principle Investigator must provide a statement certifying they are on the Register of Professional Archaeologists.
- The Principle Investigator must provide a statement certifying they are registered with the Michigan Office of the State Archaeologist.
- The Principle Investigator and Project Manager must provide a statement certifying their education and experience meets the requirements of the Secretary of Interior (48-FR-44738-9).

Staff Education and Experience

- Provide a statement certifying the Project Manager, Principle Investigator and Site Manager, if different from the Project Manager, possess a Master Degree in Anthropology/Archaeology.
- Submit at least one (1) resume for the Project Manager, Principle Investigator and Site Manager, if different from Project Manager, and all other individuals performing decision making capacities, detailing their education and experience in historic archaeology research, analysis, and writing for the last three (3) years. Provide breakdown of Phase I, II, and III experience by project/site.

Consultant Project Experience

- Submit at least one (1) and no more than two (2) sample cultural resource report(s) (e.g. Phase I, II, and/or III Archaeology) on a CD.
Note: Only necessary for newly prequalified or for those that have experienced a staffing change.
- Submit a list of at least three (3) historic archaeology projects and identify any work in the Upper Great Lakes Region and performing Phase I, II, and III work.
- Submit a list of at least three (3) historic archaeology projects confirming experience in making determinations of National Register eligibility.
- List at least one (1) example of historic archaeology experience in research and preparation of land use history reports.

Noise Assessment/Abatement-

The types of work performed by Consultants pre-qualified for noise assessment and abatement include written descriptions of noise sensitive areas (residences, school, parks, etc.) affected by a proposed project; measurement and documentation of the extent of the impact (in decibels) at each sensitive area, including a comparison of the predicted noise levels with both the FHWA noise criteria and the existing noise levels; descriptions and discussion of noise abatement measures which have been considered for each impacted area and those measures that are reasonable and feasible and that would likely be incorporated in the proposed project; and descriptions and discussion of noise impacts for which no prudent solution is reasonably available and why. *The services of an engineer are not required.*

Equipment

- Sound level meter (Type 1).
- FHWA approved Traffic Noise Model software.

Staff Education and Experience

- Submit a copy of the certificate of completion for individual key personnel performing work in this category confirming attendance in the course on the current version of the FHWA required Traffic Noise Model. Evidence of attendance in a course on the Fundamental of Traffic Noise is not required but is encouraged.
- Submit a listing of any additional education and training pertaining to this category.

Consultant Project Experience

- Submit a descriptive paragraph for a minimum of two (2) and no more than three (3) projects specific to traffic noise measurement/analysis of noise impacts/noise mitigation measures to highway projects.
- Submit a paragraph for a minimum of one (1) and no more than three (3) projects confirming experience with MDOT's Noise Abatement Policy and Program requirements.
- Submit written statements from non-MDOT clients, review agencies and/or resource agencies for at least three (3) projects submitted above certifying their satisfaction with the work your organization performed in this category.

Prehistoric Archaeology-

The types of work performed by Consultants prequalified for Prehistoric Archaeology includes being able to perform professional prehistoric archaeological research, land-use histories, Phase I Archaeological Site Location Surveys of prehistoric archaeological resources, Phase II Archaeological Site Evaluation of prehistoric archaeological resources, and Phase III Archaeological Site Mitigations of prehistoric archaeological resources. Meet or surpass requirements of Section 106 of the National Historic Preservation Act of 1966, as amended, to professionally perform prehistoric archaeological work; determine National Register of Historic Places eligibility for prehistoric archaeological properties; and, using archaeologists whose professional qualifications for performance of prehistoric archaeology meets or surpasses the Secretary of the Interior's regulations (48-FR-44738-9).

Professional Registrations

- The Project Manager and Principle Investigator must provide a statement certifying they are on the Register of Professional Archaeologists.
- The Principle Investigator must provide a statement certifying they are registered with the Michigan Office of the State Archaeologist.
- The Principle Investigator and Project Manager must provide a statement certifying their education and experience meets the requirements of the Secretary of Interior (48-FR-44738-9).

Staff Education and Experience

- Provide a statement certifying the Project Manager, Principle Investigator and Site Manager, if different from the Project Manager, possess a Master Degree in Anthropology/Archaeology.
- Submit at least one (1) resume (maximum of three pages each) for the Project Manager, Principle Investigator and Site Manager, if different from Project Manager, and all other individuals performing decision making capacities, detailing their education and experience in prehistoric archaeology research, analysis and writing for the last three (3) years. Provide breakdown of Phase I, II, and III experience by projects/site.

Consultant Project Experience

- Submit at least one (1) and no more than two (2) sample cultural resource report(s) (e.g. Phase I, II, and/or III Archaeology) on a CD.
Note: Only necessary for newly prequalified or for those that have experienced a staffing change.
- Submit a list of at least three (3) prehistoric archaeology projects and identify any work in the Upper Great Lakes Region in performing Phase I, II, and III work.
- Submit a list of at least three (3) prehistoric archaeology projects confirming experience in making determinations of National Register eligibility.
- List at least one (1) example of prehistoric archaeology experience in research and preparation of land use history reports.

Reconnaissance/Intensive Level Survey-

In Michigan, an Intensive Level Survey is conducted in those areas of the state where some information already is available on historically and architecturally significant properties and their significance is recognized. This type of survey *photodocuments* specific buildings, structures, sites, objects, and districts, assesses the eligibility of individual properties and districts for the National Register of Historic Places, and recommends whether or not Determinations of Eligibility are needed for important resources. An Intensive Level Survey may be combined with a Reconnaissance Level Survey. Research shall be conducted and compiled by a person meeting the professional qualifications set forth in 36 CFR 61 – *Appendix A for Historian or Architectural Historian*.

The type of work performed by Consultants prequalified for Intensive Level Surveys include the collection of National Register quality historic research, and using the research results to develop historic contexts represented by the specified individual properties and districts within the project area. The Consultant will also conduct field work following Secretary of Interior Standards & Guidelines for Historic Preservation, which will include the review and analysis of any previous surveys, mapping, photography, and the delineation of historic district boundaries. The Consultant will perform post-fieldwork research and develop national register evaluations for buildings and structures within the project/district boundaries. Finally, the Consultant will organize the collected field data and research into a usable format following the instructions provided in the *State Historic Preservation Office Manual for Historic and Architectural Surveys in Michigan*, or other format specified by MDOT, but always including the production of building/structure/district inventory cards following the Ruskin database system or specified equivalent.

The types of work performed by Consultants prequalified for Reconnaissance Level Surveys includes conducting *windshield surveys* to determine buildings, structures, and/or districts that are potentially eligible for listing on the National Register of Historic Places, conducting research to determine historical contexts based on national register standards, providing maps showing the project Area of Potential Effect (A.P.E.) and buildings, structures, and/or districts within and/or overlapping the A.P.E., photographing resources within the A.P.E. and producing historic resources inventories following the Ruskin database system or approved equivalent. The Consultant will also generate a report in a usable format determined by MDOT. Commonly Reconnaissance Surveys included Intensive Level Surveys of specified resources but is typically used to determine if an Intensive Survey is warranted.

Professional Registrations

- The Project Manager and/or Principle Investigator must provide a statement certifying they have a degree in American History and/or Architectural History and/or Historic Preservation or any related field.

Staff Education and Experience

- Submit at least one (1) resume for the Project Manager and/or Principle Investigator detailing their education and writing experience in American History, American Architecture History or Historic Preservation research, analysis and writing. Master's Degree preferred, Bachelor's Degree required in American History and/or Architectural History and/or Historic Preservation or any related field.
- Submit a list detailing any additional professional qualifications, education and training for key personnel.

Consultant Project Experience

- On a CD, submit one (1) and no more than two (2) sample cultural resource report(s) specific to a transportation related project. The report(s) must include graphics and legible photographs along with instances where NRHP is listed or eligible resources have been identified.
Note: Only necessary for newly prequalified or for those that have experienced a staffing change.
- Submit a paragraph for at least three (3) projects confirming experience in identifying historic districts within a community.
- Submit a paragraph for at least three (3) historic architecture projects detailing experience in making determinations of National Register eligibility.
- Submit a paragraph for at least one (1) project summarizing ability to assess roadside landscapes.
- Submit written statements from non-MDOT clients, review agencies and/or resource agencies for at least three (3) projects submitted above certifying their satisfaction with the work your organization performed in this category
- Submit a list of projects identifying and analyzing cultural landscapes.

Wetland Assessment-

The types of work performed by Consultants prequalified for wetland assessment includes being able to identify wetlands by type, delineate their boundaries, assess their values and functions, assess the impact of a transportation project on the wetland, identify alternatives to taking the wetlands, and develop procedures to mitigate for any wetlands loss.

Staff Education and Experience

The individual(s) performing this work must possess a Bachelor's Degree in a natural resources field and have a minimum of five years experience performing wetland assessment work.

Submit, for key personnel only, a resume identifying wetland assessment projects (no more than (3) three) including name of client and contact, project description, location, date, and personnel's involvement in said projects. Also submit, for key personnel only, any additional professional qualifications, educational experience, and training, specifically related to wetland assessment.

Consultant Project Experience

- Submit a brief description for at least three (3) projects within the past five (5) years specific to the Upper Great Lakes Region involving wetland delineations and/or wetland functional assessments, which include name of client and contact, project description, location, date, and vendor's involvement in said projects (limited to one page each).
- Submit a brief description for at least three (3) projects within the past five (5) years involving wetland delineations and assessments in relation to highway project development, which include name of client and contact, project description, location, date, and vendor's involvement in said projects (limited to one page each).
- Submit written statements from former clients, review agencies, and/or resource agencies for at least three (3) projects submitted above certifying their satisfaction with the work your organization performed in this category.
- Submit at least one (1) Wetland Monitoring Report within the past five (5) years on a CD.
Note: Only necessary for newly prequalified or for those that have experienced a staffing change.

Wildlife and Endangered Species Assessment -

The type of work performed by Consultant prequalified for wildlife and endangered animal assessment includes: being able to perform surveys of proposed transportation projects to identify animal species, assess their population size and describe their critical habitat by type, size, and quality. The Consultant must be able to identify all species of animals that are known to occur in Michigan and the surrounding Great Lakes Region. This also includes all animals that are on either the federal list of threatened (T), endangered (E) or candidate species as well as the state list for all T/E/special concern species. The ability to assess the population size of any listed species identified and the habitat attributes that are required in its life cycle and ecology. The educational, training, and work experience required to conduct animal surveys and impact evaluations are principally concentrated in the science of zoology, terrestrial and aquatic ecology and fisheries and wildlife management. The services of an engineer are not required.

Permits

Submit a copy of a valid Michigan Threatened/Endangered Species permit. These permits are granted from the Michigan Department of Natural Resources

Staff Education and Experience

Only submit for the individual personnel performing work in this category, a copy of degree in zoology or a related biological field and copies of any additional professional registrations or training.

Consultant Project Experience

- Submit a paragraph for at least three (3) projects and no more than five (5), describing only project experience relating to wildlife field surveys and report preparation for highway development projects in the past five (5) years.
- Submit a paragraph for at least one (1) and no more than five (5) projects describing experience with the Upper Great Lakes Region wildlife and ecology for the past five (5) years.
- Submit a paragraph for at least one (1) and no more than five (5) projects describing experience with field reviews, impact analysis and agency reviews regarding road building projects with T/E animal species impacts for the past five (5) years.
- Submit a one (1) page written description for each project (REQUIREMENT: at least THREE and no more than TEN projects) confirming experience in construction projects relevant to assessment of T/E animal species including: field surveys/procedures followed, permitting requirements and describe specific work performed with resource agencies and final documents prepared for the past five (5) years.
- Submit written statements from non-MDOT clients, review agencies and resource agencies for at least three (3) projects submitted above certifying their satisfaction with the work your organization performed in this category.

Real Estate

Outdoor Advertising-

Provide outdoor advertising inventory/inspection services, including regulation of the number and placement of billboards and the preparation of hearing packages for MDOT.

Staff Education and Experience

Provide résumés showing the following:

- Education, registrations, and certifications.
- Staff must have a minimum of five (5) years of general office and field experience. Experience with MDOT is desirable.
- List only projects completed within the past eight (8) years.
- List all pertinent information about the projects listed. The name of the client, project description, location, construction cost, and the employee's role on the project. Also, provide the name and phone number of the client's representative. This person may be contacted to provide a reference.
- No major experience required. Must have good customer service skills, the ability to develop a working relationship with MDOT Staff, the office of the Attorney General, the public, and the Outdoor Advertising Industry. Must have computer knowledge and basic experience in photography. It would be helpful to have knowledge of the Control Section system utilized by the Department as well.
- Knowledge of MDOT standards and procedures. Consultant must know the requirements of the Highway Advertising Act and must familiarize themselves with the procedures and guidelines set forth in the Highway Advertising Manual.

Consultant Experience

- Provide a list of Consultant experience for outdoor advertising projects. For each project to be submitted for evaluation, provide the name and phone number of the owner's representative. This person may be contacted to provide a reference.
- List only projects completed within the past eight (8) years.
- Provide a list of current employees involved with the projects to be submitted for evaluation.

Subsurface Utility Engineering-

Provide Subsurface Utility Engineering (SUE) to accurately identify, characterize, and map underground utilities early in the development of a highway project.

Professional Registrations

One (1) or more engineers licensed in Michigan.

Equipment

Provide a document certifying that you currently own or rent and staff is trained to use the equipment listed below. Vendor must list equipment and designate whether it is owned or leased/rented. A lease/rental agreement is required if your company does not own the equipment.

- Equipment for vacuum extraction and hand excavation
- Microsoft Office (current MDOT version)
- MicroStation (current MDOT version)
- Survey equipment
- Designating equipment

Consultant shall provide information regarding any SUE services which are sub contracted.

Staff Education and Experience

- One (1) Michigan Professional Engineer with a minimum of five (5) years of experience in SUE.
- Provide resumes with a list of only SUE projects for each staff member and provide all pertinent information about the projects listed including:
 - Name of client and contact information (may be contacted for reference)
 - Project description, location, and date
 - SUE cost
 - Employee's role on the project including SUE Utility Quality Levels performed
- Knowledge of ASCE standard "Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data".
- Knowledge of MDOT design standards for depiction of utility information.

Consultant Project Experience

List a minimum of six (6) SUE projects and provide the following information for each project:

- Name of client and contact information
- Project description, location, and date
- SUE cost
- Utility quality levels performed
- Length of designating (quality level B)
- Number of excavated test holes (quality level A)
- Data management techniques
- Participation in project's utility coordination
- Unique or special project conditions
- Client deliverables (for example: plan sheets, spreadsheets, etc. Limited to 5 pages per project.)

Utility Coordination-

Provide utility coordination for proposed MDOT road/bridge projects, during the design phase, which include identifying existing/proposed utility owners and their facilities, analyzing and resolving conflicts between utility facilities and proposed construction, documenting meetings, discussions, decisions and other efforts associated with utility coordination and developing strategies and contract documents in order to avoid potential conflicts during construction.

Professional Registrations

One (1) or more engineers licensed in Michigan.

Equipment

Provide a document certifying that you currently own and that your staff is trained to use the software listed below (Note that each version of software must be identified and must be MDOT's current version):

- Microsoft Office (current MDOT version)
- MicroStation (current MDOT version)

Staff Education and Experience

- One (1) Michigan Professional Engineer with a minimum of five (5) years of experience in Utility Coordination.
- Provide resumes with a list of only projects with Utility Coordination for each staff member and provided all pertinent information about the projects listed including:
 - Name of client and contact information
 - Project description, location, and date
 - Employee's role on the project and involvement in the project's Utility Coordination
- Knowledge of AASHTO guidelines and best practices related to Utility Coordination.

Consultant Project Experience

List a minimum of six (6) projects with Utility Coordination and provided the following information for each project:

- Name of client and contact information
- Project description, location, and date
- Identified utilities within project limits
- Coordination methods during the project's design phase
- Utility conflict resolution processes and methodologies
- Identified reimbursable utility relocations
- Tracking tools used
- Relocation plan reviews
- Contract documents used such as the Notice to Bidder for Utility Coordination
- Design changes made to avoid a utility relocation
- Coordination documents (for example: correspondence, tracking sheets, etc. Limited to 5 pages per project.)

Traffic and Safety Services Group

Maintaining Traffic Plans and Provisions-

Consultant services to develop maintaining traffic plans and provisions. Including but not limited to the following examples of such designs: highways, streets, airports, and pay-parking lots.

Equipment

Submit a statement certifying that you currently own and staff is trained to use MicroStation CADD software. (Note that each version of software must be identified and must be MDOT's current version)

Staff Education and Experience

- Documentation detailing all formal training specifically related to maintaining traffic of personnel directly working on designs.
- Documentation showing all maintaining traffic experience of key personnel responsible for maintaining traffic design development as well as documentation showing which current personnel developed and/or was responsible for the samples of maintaining traffic submitted for review.

Consultant Project Experience

- Submit at least three samples of projects related to development of maintaining traffic plans the designer has worked on in the last five years with the Consultant correctly applying current Michigan requirements, specifications, and details for maintaining traffic plans. These projects must show examples of a diverse cross-section of roadway types (i.e. freeway, multi-lane, two-way roadways, etc.) and a variety of work (multi-lane reconstructs, overlays, detours, flagging, etc).
- Submit plans' showing the firm has the capacity to do maintaining traffic for the most basic to the most complex projects with proper MDOT format, Special Provisions, and standard specifications.
- Submitted samples must include any staging drawings, written Special Provisions for Maintaining Traffic, appropriate Signing and channelization typicals, quantity take-offs, all staging, and all other pertinent documentation for a complete maintaining traffic package.
- Submit 11" X 17" folded plans. If the firm has not previously completed maintaining traffic plans and special provisions for MDOT, they may submit a set of non-trunkline plans for three (3) separate projects marked up to reflect current MDOT specifications and details along with the other requirements detailed above. Or submit the same for three (3) imaginary locations correctly applying current MDOT specifications and details.

Pavement Marking Plans-

Design services for pavement marking plans. Including but not limited to the following examples of such design: highways, streets, airports, and pay-parking lots.

Equipment

- List equipment used to draw plans.

Staff Education and Experience

- Detail the education and training of the designer working directly on the permanent pavement marking plans. List the permanent pavement marking projects the designer has worked on in the previous two (2) years.
- If the designer mentioned above is not a registered professional engineer in the state of Michigan, detail the education and training of the professional engineer registered in Michigan who will check and be responsible for the design. List permanent pavement marking projects the professional engineer registered in Michigan has worked on in the previous two (2) years.

Consultant Project Experience

Submit two (2) samples of pavement marking plans and proposals showing the Consultant understands and correctly applies current Michigan specifications and details for pavement marking design. If the Consultant has not previously completed permanent pavement marking plans and special provisions for the Michigan Department of Transportation (MDOT), they may submit a set of non-trunkline plans marked up to reflect current MDOT specifications and details or, they may submit plan sheets of an imaginary location correctly applying current MDOT specifications and details. Example(s) submitted must be for permanent markings, not temporary markings. Submit 11" x 7" folded plans. Provide two examples showing both longitudinal lines and special markings. One (1) example must be freeway and one (1) example must be non-freeway. These plans should include, but not be limited to the following:

- Material color and type.
- Line width.
- Marking location, length, and spacing.
- Quantities.
- Pavement marking layout for a freeway interchange.
- Pavement marking layout for a signalized and a non-signalized non-freeway intersection
- Special provisions related to material and/or application procedure, if applicable.
- "Special Provisions for Maintaining Traffic" if permanent markings are referenced.
- List the guides and manuals you used in preparation of the sample documents submitted for review.

Permanent Freeway Traffic Signing Plans-

Consultant services to develop permanent freeway traffic signing plans. Including but not limited to freeway signing design.

Professional Registrations

One (1) Professional Engineer Licensed in the State of Michigan is required.

Equipment

Submit a statement certifying that you currently own and staff is trained to use MicroStation, SignCad and MTSIS software. (Note that each version of software must be identified and must be MDOT's current version).

Staff Education and Experience

- Documentation (Resume) detailing the education and training of personnel directly working on designs.
- Documentation (Resume) showing the experience of key personnel responsible for freeway-signing design, including the last three (3) projects related to freeway traffic signing plans that designer has worked on in the last five (5) years.

Consultant Project Experience

- Submit two (2) samples of freeway traffic signing plans. These sets must show the Consultant understands and can correctly apply current Michigan requirements. These requirements are shown in documented Sections of the most current edition of the following - The Michigan Manual of Uniform Traffic Control Devices (MMUTCD).
 - 2D- Guide Signs- Conventional Roads
 - 2E - Guide Signs- Expressways
 - 2F - Guide Signs- Freeways

Other related documents are - Freeway Signing Design, Placement and Application Guidelines; Michigan Standard Highway Signs Manual (English); Guidelines for Signing on State Trunkline Highways; Traffic and Safety Sign Support Standards and Special Details; and The Manual of Traffic and Safety Notes

- Submit two (2) sets of 11" X 17" freeway sign plans folded to 8 ½" x 11". If the firm has not previously completed freeway traffic signing plans for MDOT, they must submit two (2) sets of non-trunkline plans marked up to reflect MDOT specifications and details. These could include plan sheets from another state or province, correctly applying current MDOT specifications and details to the locations. These plans should include, but not be limited to the following:
 - Sign Type (Regulatory, Warning, and Guide signs)
 - Sign Material type and Quantities
 - Sign Support type and Quantities
 - Sign Location
 - Special provisions if applicable
 - Reference to appropriate Standard Specifications for Construction
 - "Special Provisions for Maintaining Traffic" if Freeway Traffic Signing is referenced
 - Signing layouts for two (2) rural interchanges
 - Signing layouts for two (2) urban interchanges
 - A Minimum of two (2) Sign Truss Layouts
 - A Minimum of two (2) Sign Cantilever Layouts
- Submit documentation showing familiarity with MDOT procedures, guidelines, and standards pertaining to freeway signing plans.

Permanent Non-Freeway Traffic Signing Plans-

Consultant services of development of Permanent Non-freeway traffic signing plans. Including but not limited to the design of Non-Freeway Signing.

Professional Registrations

One (1) Licensed Professional Engineer in the State of Michigan is required.

Equipment

Submit a statement certifying that your staff have been trained, and are currently trained to use the Michigan Traffic Sign Inventory System (MTSIS).

Submit documentation listing hardware and software (i.e., SignCad) used to provide quality products and services. (Note that each version of software must be identified and must be MDOT's current version)

Staff Education and Experience

- Documentation (Resume) detailing the education and training of the personnel that will be working directly on designs.
- Documentation (Resume) showing experience of key personnel that will be responsible for Non-freeway signing design, including the last three (3) projects that designer has worked on in the last five (5) years related to Non-freeway traffic signing plans.

Consultant Project Experience

Submit two (2) samples of Non-freeway traffic signing plans. These sets must show you understand and can correctly apply the current Michigan requirements. These requirements are shown in documented Sections of the most current editions of the following –The Michigan Vehicle Code, Michigan Manual of Uniform Traffic Control Devices (MMUTCD), Standard Non-Freeway Placement/Design Guidelines, and the MDOT Traffic and Safety Notes.

- 2A- Signs Introduction and General Standards
- 2B- Regulatory Signs
- 2C- Warning Signs
- 2D- Guide Signs- Conventional Roads
- 2E – Guide Signs- Expressways
- 2H – Recreational and Cultural
- Other related documents are- Federal and Michigan Standard Highway Signs Manuals (English), and/or AASHTO 2002 Interim Report – Highway Signs, Luminaries and Traffic Signals.
- Submit two (2) sets of Non-freeway sign log plans in one line listing format at 8 ½" x 11". These sets shall show the correct Michigan Traffic Sign Inventory System (MTSIS) log format required for Non-freeway sign contracts. If the firm has not previously completed Non-freeway traffic signing plans for MDOT, they must submit two (2) sets of Michigan trunkline plans marked up to reflect correct MDOT specifications and details, including familiarity with MTSIS. These could include plan sheets from another State or Province, correctly applying current MDOT typicals and special details to the locations. These plans should include, but not be limited to the following:
 - Sign Type (Regulatory, Warning, and Guide signs)
 - Sign Material type and Quantities
 - Sign Support type and Quantities
 - Sign Location
 - Special provisions if applicable
 - Reference to appropriate Standard Specifications for Construction
 - "Special Provisions for Maintaining Traffic" if non-Freeway Traffic Signing is referenced
- Submit documentation showing familiarity with MDOT forms, procedures, guidelines and standards pertaining to Non-freeway signing plans, including MTSIS. These include Sign Support Typicals, Special Provisions, Supplemental Specifications, Maintaining Traffic, and Utility Relocation.

Safety Studies-

Safety analysis Consultant services including but not limited to the following examples of such services: crash analysis encompassing statewide and local intersection surveillance, 3R/4R safety reviews, corridor safety reviews, corridor safety studies, deer crash analysis, motor carrier safety analysis, project improvement effectiveness analysis, and litigation data assistance.

Staff Education and Experience

- Documentation detailing the education and training of personnel directly working on analysis. This should include all degrees obtained and training courses attended which pertain to safety analysis.
- Documentation showing the experience of key personnel responsible for safety analysis.
- The last three (3) projects related to safety analysis this engineer worked on in the previous five (5) years.

Consultant Project Experience

- Submit three (3) traffic safety operational analysis reports showing the Consultant understands and is able to develop crash mitigation recommendations for:
 - Crash safety analysis (statewide and local intersection surveillance), 3R/4R reviews, and corridor safety studies.
 - Project improvement effectiveness analysis.
- Submit three (3) safety reports or studies showing the Consultant understands and can properly apply MDOT procedures, guidelines, and standards pertaining to safety studies. The three (3) safety reports or studies should include at a minimum a detailed report containing the following:
 - A problem determined from the crash history considering possible patterns, concentrations, or trends.
- Mitigation proposals.
- The Consultant must be able to determine the statistical significance of the study crashes compared to expected statewide patterns in order to determine whether the location could become a project.

Traffic Capacity Analysis and Geometric Studies-

Consultant services to provide operational studies including but not limited to capacity analysis. Also, provide the expertise to make recommendations on geometric elements addressing access management and intersection, interchange, and freeway improvements and/or upgrades.

Equipment

Submit a statement certifying that you currently own and staff is trained to use the following (Note that each version of software must be identified and must be MDOT's current version):

- Highway Capacity Manual
- Synchro (Synchro Light is not acceptable)

Staff Education and Experience

- Submit a resume detailing the education and training of personnel directly working on these studies. A minimum of one (1) licensed engineer must be a key person involved with the studies. The Consultant should also have considerable experience using Highway Capacity Software (HCS), Synchro, and NETSIM.
- Provide documentation showing the experience of key personnel responsible for traffic operations studies.
- Submit documentation listing the last three (3) projects related to traffic operations studies that engineer worked on in the last five (5) years.

Consultant Project Experience

- Submit two (2) samples, with at least one (1) traffic operation study in the state of Michigan. Of special interest is a study completed on state trunkline. The sample shall include a capacity analysis and recommended geometric improvements. Submit copies of original studies highlighting the above analysis and recommendations.
- If the engineering study includes a review of potential signal operations, the Consultant must also be prequalified in either the Simple or Complex Traffic Signal Operations, depending on the number of signals involved. The review of potential signal operations includes warrant analysis for new signals or any other signal analysis.
- Submit documentation as described below which shows the Consultant's familiarity with MDOT procedures, guidelines, and standards pertaining to traffic operations studies and correctly applies them to address geometric elements, which may not be acceptable. The documentation can include a study showing an actual or perceived geometric condition, which needs to be analyzed, and a suitable discussion with supporting evidence providing a solution to the issue.

Traffic Signal Design-

Design services of electronic/electrical devices. Including but not limited to the following examples of such designs: traffic signals, overhead flashing beacons, sign opticals, and interconnect methods including radio, hardwire, and fiber optic.

Professional Registrations

Minimum of one (1) Licensed Professional Engineer in the State of Michigan is required.

Equipment

Submit a statement certifying that you currently own and staff is trained to use MicroStation CADD software. (Note that each version of software must be identified and must be MDOT's current version)

Staff Education and Experience

Vendor has a minimum of two (2) personnel working directly on signal design, at least one of which is an engineer. Vendor has submitted resumes of these personnel which include the following:

- Level of education completed
- A minimum of five (5) years experience in Traffic Signal Design for each staff member
- A list of projects for each staff member:
 - A minimum of three (3) projects must have been completed in the past five (5) years
 - Project information must include:
 - The name and phone number of contact person for the client. This person may be contacted to provide a reference
 - Project description, location, construction cost, and the employee's role on the project
 - Projects must demonstrate knowledge of MMUTCD and MDOT signal standards and procedures

Consultant Project Experience

The Vendor must demonstrate the ability to prepare a complete set of MDOT Signal Design plans and proposal in current e-proposal format and in accordance with the deliverables in the most current scope of service for traffic signal design.

E-proposal format requirements can be found at:

http://www.michigan.gov/documents/MDOT_Eproposal_Training_for_MDOT_Consultants_165471_7.pdf

Deliverables and a sample signal design plan can be found under Traffic Signals, Design Guides at:

http://mdotwas1.mdot.state.mi.us/public/tands/Details_Web/deliverables_and_planhalf.pdf

Submit a list of three (3) projects completed within the past five (5) years.

For each project provide:

- 1) The name and phone number of the owner's representative. This person may be contacted to provide a reference.
- 2) Indication if the firm was the prime or sub consultant. If the sub consultant, then clearly indicate what was the firm's role.

If the Vendor has no previous MDOT signal design experience, prepare and submit the following in addition to 1) and 2) above:

- 3) An electronic file PLANHALF.pdf including all contract plan sheets in MDOT format for traffic signal modernization of one or more actual or fictitious location(s).
- 4) An electronic file PROPOSAL.pdf including appropriate contract documents in MDOT format for traffic signal modernization of one or more actual or fictitious location(s).

Complex Traffic Signal Operations-

Consultant services for traffic signal operations including but not limited to the following examples of such services: warrant analysis for traffic signal installation, phasing studies of new/existing electrical devices, and retiming of traffic signal corridors and individual locations. This also includes recommendations for geometric configurations to accommodate operations of devices. Example projects for this classification are long corridor or region wide retiming projects, up to 100 signals or more. They also include traffic impact studies for private developments or any other signal analyses on state trunkline. They may or may not require signal warrant analyses.

Equipment

(Note that each version of software must be identified and must be MDOT's current version)

- Adobe Acrobat Professional
- Both Federal and Michigan Manual on Uniform Traffic Control Devices
- Synchro 7 Software or newer
- Michigan Signal Optimization Guidelines
- Michigan Timing Plan Preparation Guidelines
- Guidelines and forms are found at the following website:

<http://mdotwas1.mdot.state.mi.us/public/tands/plans.cfm>

<http://mdotwas1.mdot.state.mi.us/public/webforms/index.cfm>

Staff Education and Experience

- Documentation detailing the education and training of personnel directly working on analysis. A minimum of one (1) licensed engineer is a key person involved with the analysis.
- Documentation showing the experience of the key personnel responsible for traffic signal operational analysis. The last three (3) projects related to traffic signal corridor analysis that engineer worked on in the last eight (8) years.

Consultant Project Experience

- Submit one sample of traffic signal operational analyses showing the Consultant understands and correctly applies current requirements as shown in the most current edition of The Michigan Manual on Uniform Traffic Control Devices (MMUTCD). The report should summarize analysis steps used and conclusions developed based on that analysis. The report should define the problem being addressed by the recommended electronic device. It will include all applicable data, a traffic signal warrant graph, an intersection layout, and show proper application of the traffic signal warrants. The Consultant should demonstrate an understanding of the traffic signal warrants by being able to adjust for unusual conditions, use the appropriate traffic signal warrants, and make any recommendations of geometric changes that would be required if signalization were warranted.
- For any engineering studies that impact traffic on trunkline roadways, the Consultant must also be prequalified in Traffic Capacity Analysis and Geometric Studies (formerly known as Traffic Operation Studies).
- Submit one corridor timing analysis sample containing a minimum of five (5) traffic signals showing the Consultant understands and can properly apply engineering expertise. This sample should include all data for both before and after conditions, all applicable data collected, electronic copies of the Synchro analysis on CD for review, traffic signal layout drawings showing all signal equipment at the intersection, all analysis information used in developing traffic signal timing recommendations for time of day plans, and before and after timing permits in MDOT format with appropriate controller codes. Where appropriate, traffic signal controller back sheets should also be included.

All consultants approved for Complex Traffic Signal Operations will also be granted approval for Simple Traffic Signal Operations with or without application.

Simple Traffic Signal Operations-

Consultant services for traffic signal operations including but not limited to the following examples of such services: warrant analysis for traffic signal installation, phasing studies of new/existing electrical devices, and retiming of traffic signal corridors and individual locations. This also includes recommendations for geometric configurations to accommodate operations of devices. Example projects for this classification are traffic impact studies for private developments or any other signal analyses on state trunkline that include a **maximum of 3 signals**. These may or may not require signal warrant analyses and may also include time-space analysis of proposed or existing signals within an existing signalized corridor. **For any engineering study including more than 3 traffic signals, the Consultant must be pre-qualified in Complex Traffic Signal Operations.**

Equipment

(Note that each version of software must be identified and must be MDOT's current version)

- Adobe Acrobat Professional
- Both Federal and Michigan Manual on Uniform Traffic Control Devices
- Synchro 7 Software or newer
- Michigan Signal Optimization Guidelines
- Michigan Timing Plan Preparation Guidelines
- Guidelines and forms are found at the following website:

<http://mdotwas1.mdot.state.mi.us/public/tands/plans.cfm>

<http://mdotwas1.mdot.state.mi.us/public/webforms/index.cfm>

Staff Education and Experience

- Documentation detailing the education and training of personnel directly working on analysis. A minimum of one (1) licensed engineer is a key person involved with the analysis.
- Documentation showing the experience of the key personnel responsible for traffic signal operational analysis. The last three (3) projects related to traffic signal corridor analysis that engineer worked on in the last eight (8) years.

Consultant Project Experience

- Submit one sample of traffic signal operational analyses showing the Consultant understands and correctly applies current requirements as shown in the most current edition of The Michigan Manual on Uniform Traffic Control Devices (MMUTCD). The report should summarize analysis steps used and conclusions developed based on that analysis. The report should define the problem being addressed by the recommended electronic device. It will include all applicable data, a traffic signal warrant graph, an intersection layout, and show proper application of the traffic signal warrants. The Consultant should demonstrate an understanding of the traffic signal warrants by being able to adjust for unusual conditions, use the appropriate traffic signal warrants, and make any recommendations of geometric changes that would be required if signalization were warranted.
- For any engineering studies that impact traffic on trunkline roadways, the Consultant must also be prequalified in Traffic Capacity Analysis and Geometric Studies (formerly known as Traffic Operation Studies).
- Vendor has submitted one corridor timing analysis sample containing at least **three (3) traffic signals** showing the vendor understands and can properly apply engineering expertise and follow The Michigan Signal Optimization Guidelines. This sample should include all data for both before and after conditions, all applicable data collected, electronic copies of the Synchro analysis on CD for review, layout schematic of intersection (proposed actuation, etc.), and all analysis information used in developing traffic signal timing recommendations.

All consultants approved for Complex Traffic Signal Operations will also be granted approval for Simple Traffic Signal Operations with or without application.